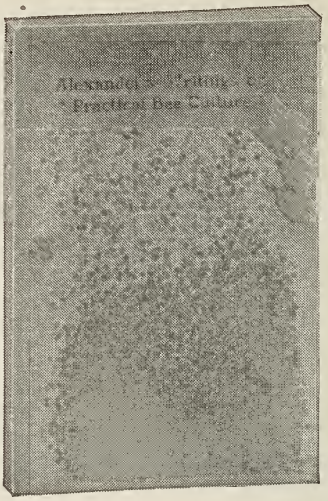
Gleanings in Bee Culture

VOL. XXXVIII JUNE 15, 1910 NO. 12

ALEXANDER'S WRITINGS ON ..PRACTICAL.. BEE CULTURE



$1.00 with Gleanings One Year

The writings of the late E. W. Alexander, who needs no introduction to the readers of GLEANINGS, have recently been collected in book form. A glance at table of contents will show the scope of the book.

Table of Contents of the Alexander Book

Alexander Plan for Weak Colonies.
Bee-keeping as a Business.
Brood-rearing in Spring.
Comb v. Extracted Honey.
Diseases of Bees.
Disposing of the Honey Crop.
Extracting Uncapped Honey.
Feeding Back Extracted Honey.
Foul Brood, European and American.
Hive-covers.
Hives, etc., to Adopt if Starting Anew.
Honey per Colony.
Honey-production.
Honey-tanks.
Increase, Making v. Buying Colonies.
Italians, Yellow v. Leather-colored.
Locality, What Constitutes a Good One.
Nuclei for Rearing Queens.
Organizing for Better Prices.
Profits in Bee-keeping.
Queens and Queen-rearing.
Queens for Early Increase.
Queens, Several in One Hive.
Queens to be Reared from Best Stock.
Spring Dwindling.
Spring Feeding.
Spring Management.
Sugar, Loaf, for Feeding.
Superseding Old Queens.
Swarms, New, to Dispose of.
Things Not to Do.
Transferring Bees.
Ventilation of Bee-cellars.
Wintering.
Wintering in Cellar.

The A. I. Root Company, Medina, Ohio. 4

For the enclosed remitance of $1.00 please send Gleanings to

_____

_____

Send the Alexander book to

Name _____

Address _____

If Gleanings is to be sent to same party as book, sign only in last two blank lines.

$1 WITH GLEANINGS ONE YEAR **$1**

5M5-20-10

Foreign postage, 60 cents extra; Canadian postage, 30 cents extra.

Gleanings in Bee Culture

Published by The A. I. Root Co., Medina, Ohio.

H. H. ROOT, Assistant Editor
A. I. ROOT, Editor Home Department
E. R. ROOT, Editor
A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

Entered at the Postoffice, Medina, Ohio, as Second-class Matter

VOL. XXXVIII JUNE 15, 1910 NO. 12

Editorial

OHIO NOW HAS AN UP-TO-DATE FOUL-BROOD LAW.

IN the opinion of some of the best experts in the country it is one of the best measures that was ever enacted. The Ohio State Board of Agriculture, on June 1, established a "Division of Apiary Inspection," with State Entomologist N. E. Shaw as chief inspector. Inspector Shaw has already begun work, and we shall expect in the near future that the two brood diseases, European and American foul brood, will be under State surveillance. Hereafter, progressive beekeepers who have been annoyed by foul brood in their vicinities will be in position to compel ignorant or negligent neighbors to eradicate the disease from among their bees.

COMB-HONEY CANARDS REFUTED.

DR. D. E. LYON, of Allendale, N. J., has done not a little to disabuse the public mind of the old heresy of manufactured comb honey. There has been running a double-column ten-point editorial, with appropriate illustrations, in a number of our daily papers, entitled, "The Model City in Miniature." Among other things the statement is made that there is no such thing as manufactured comb honey and never was any. Authority for that statement is drawn from a book by Dr. Lyon, entitled, "How to Keep Bees for Profit," recently published by the McMillan Company, of New York. This work will doubtless be widely read, and, of course, will do a great deal of good, not only stimulating an interest in bees but a demand for honey. See mention of it elsewhere.

DR. E. F. PHILLIPS, OF THE BUREAU OF ENTOMOLOGY, AT MEDINA.

ON June 1, Dr. E. F. Phillips, of the Bureau of Entomology, apicultural expert in the Department, called at Medina. He is making a rapid tour of inspection through several States, gathering general data on the subject of brood diseases. He is preparing a map of each State, showing the distribution of American and European foul brood as it exists in the various States. The present tour, we understand, will be confined largely to Michigan, Illinois, Indiana, and Ohio. He will return to Ohio about the 15th to meet our State inspector, Prof. N. E. Shaw, and his deputy inspectors.

The data that Dr. Phillips has gathered will be of great value to the various States. While, of course, these maps will not be made public, the information will be placed before the various State inspectors with a view of helping them to locate disease.

ANTI-ROBBER CAGE.

WE have been using for some time a neater and lighter form of cage that has proved very satisfactory. It is much more roomy than a tent, and may be moved about just as easily. It is so light that it may be quickly lifted up and tilted back, hence no door is necessary. Reference to the illustration, page 386, will make the construction clear. The framework, being on the inside of the wire cloth, makes a good hold for lifting, carrying, etc., the operator, of course, walking inside the cage when it is moved.

We have found no top necessary, although it would not be difficult to put wire cloth over the framework if it were needed. In a queen-rearing yard, or in any yard where manipulation is necessary during a time when bees are not gathering much nectar, and are, therefore, prying into every thing, one of these cages is a great help.

We use wire cloth on our cage, as it is not so easily torn, and is more permanent; but if one wanted a still lighter cage, mosquito-netting could be used instead. If the framework as well as the wire cloth is painted it may be left in the yard throughout the whole season without injury.

THE DANGER OF COLD WEATHER BEFORE THE HONEY-FLOW IN THE SPRING.

THIS year has been peculiar in that the long spell of hot weather over a large portion of the country in March caused the colonies to start brood-rearing at a wonderful pace. Much of the stores were used up in this manner before any new nectar was brought in, and there was danger at once of starvation. Fruit-bloom was prolonged by a series of cold days; but, on account of the weather, comparatively little honey was stored. From that time on there were so many cold days that many colonies died from no other cause than a lack of food. The stronger the colonies, the more danger of starvation. For this reason we are fearful that many colonies will be found dead—starved—when they

should have been ready for supers. The fields to-day, June 3, are beginning to whiten with the white-clover blossoms. Happy is that bee-keeper whose colonies are strong enough to be in good condition by the time the warm weather finally comes!

UNCLE SAM GETTING AFTER PATENT-MEDICINE FAKIRS.

THE United States Department of Agriculture is busy prosecuting those who are violating the provisions of the national pure-food law. It is pleasant to see that the Department is getting after some of the purveyors of deadly patent medicines, especially headache cures. The manufacturers of these nostrums are not allowed to make any false statement concerning their alleged cures. For example, many drugs practically worthless have claimed to cure every thing under the sun; and unless these drugs contain some remedy well recognized by the general medical fraternity to cure some specific disease or malady it will come under the ban of Uncle Sam.

MISBRANDING OF HONEY.

The Department has been particularly active in getting after those who are misbranding their food products. Syrups and jellies have been misbranded galore. The first instance we have seen where honey has been misbranded was in the case of Henry Boeckmann, of Brooklyn, N. Y. We copy direct from leaflet No. 269, issued by the Department:

On or about October 7, 1907, Henry Boeckmann, of Brooklyn, N. Y., shipped from the State of New York into the State of New Jersey a quantity of a food product labeled: "Compound pure comb and strained honey and corn syrup, A. Boeckmann, Brooklyn, N. Y." Samples from this shipment were procured and analyzed by the Bureau of Chemistry, United States Department of Agriculture; and as the findings of the analyst and report thereon indicated that the product was misbranded within the meaning of the Food and Drugs Act of June 30, 1906, the Secretary of Agriculture afforded Henry Boeckmann and the dealer from whom the samples were purchased opportunities for hearings. As it appeared after hearings held that the said shipment was made in violation of the act, the Secretary of Agriculture reported the facts to the Attorney-General, with a statement of the evidence on which to base a prosecution.

In due course the evidence was presented by the United States Attorney for the Eastern District of New York to the grand jury, who presented an indictment against the said Henry Boeckmann, charging the above shipment and that the product was misbranded, in that it was labeled "Compound pure comb and strained honey and corn syrup," which statement was false and misleading, in that it represented the principal ingredient of said product to be pure comb honey, whereas, in fact, the principal ingredient was glucose and starch sugar.

INJUDICIOUS FEEDING.

PERHAPS there is no one part of bee-keeping that is so much overdone by the beginner as the feeding for stimulative purposes. Our Mr. Bain remarked to-day, "I believe there are barrels and barrels of sugar fed to colonies and nuclei when the bees would have been better off without it." Here is the point. In many parts of the country the weather, especially in the spring and early summer, can not be relied upon. The beginner believes that his bees should be stimulated, and gives each colony or nucleus a rather too liberal supply of syrup. The bees at once are excited, the queen is fed, and a nice lot of brood is started. The weather meanwhile turns cold; the bees, not being in sufficient numbers to cover and care for this brood properly, carry out great numbers of the larvæ around the edges of the circles of brood comprising the brood-nest.

Or, suppose the weather does not become cold. Another lot of feed is given in a short time, and the bees, excited almost to a frenzy, go to work and carry out the brood, whether it is dead or not, and *store the syrup in its place*. Soon after this the main honey-flow may begin, and the bees, having been used to storing the syrup in the brood-combs, prefer to keep on storing there, and it is very difficult to get them to work in the supers.

If there are several nuclei that need feeding, be careful not to feed the weaker ones, or robbing will be started. Futhermore, if the weak ones are fed and stimulated, brood is likely to be carried out as above stated. Mr. Bain's plan is to feed only the stronger nuclei, and draw from them either brood or honey to help out the weak ones.

NO CAUSE FOR ALARM.

IN the November 1st issue we published two articles on a disease of adult bees, one written by Dr. C. C. Miller, and the other a translation of an article by Herr Alois Alfonsus, the editor of *Bienen Vater*. Both of these articles were reports of a paper by the distinguished head of the K. Anstalt für Bienenzucht at Erlangen, Dr. Enoch Zander, read before the Weissenfels convention of bee-keepers last August. Dr. Zander reported that a protozoon (animal parasite of microscopic size) named by him *Nosema apis* is the cause of a disease of adult bees, that the disease is highly infectious and very widespread, and that it constitutes a serious menace to the bee-keeping industry. The publication of these results has tended to alarm many bee-keepers on this continent who fear that some new disease will be introduced into America, and add to the troubles which we already have in the two brood diseases. There is no cause for such alarm.

Dr. Zander was working with the well-known dysentery, and finds this organism in it. He does not claim that he has discovered a new disease, but he was merely searching for the cause of the trouble. The supposition mentioned in the articles that the organism *Nosema apis* is responsible for other adult diseases, is not yet proven; and, even if that be the case, they will be no worse scourges when their cause is known.

The trouble which we call dysentery is recognized to be induced by improper food for winter, such as honey-dew combined with long confinement. The undigested portions of honey-dew fill the intestine un-

til the bee is greatly distended. When a day suitable for flight comes, the droppings are seen all about the hive; and in severe cases the fæces are deposited in the hive. The fact that dysentery can be produced and prevented at the will of the bee-keeper makes it no serious malady to the progressive members of our ranks. Last season, when honey-dew was so abundant in the eastern United States, it was predicted that the winter losses due to dysentery would be great. Such was the case, except among bee-keepers who were forehanded enough to remove the honey-dew and supply good stores. We can, therefore, predict dysentery and take steps to prevent it.

The practical bee-keeper need not worry about this question, but leave it to those qualified to investigate the organism which Dr. Zander has found. If *Nosema apis* is the cause of dysentery, it is now present with us and we need not worry about its introduction. Whether or not it is the cause of the disease, there will be no greater losses from dysentery when the question is settled. In the meantime it should be remembered that the supposition that *Nosema* is the cause of paralysis, May disease, Isle-of-Wight disease, or any other adult malady, is only a supposition and not a claim of the author.

HOW FOUL-BROOD INSPECTION IS CARRIED ON BY VARIOUS STATES.

As most of our readers know, there is considerable difference in the laws that have been enacted by the legislatures of various States in regard to bee diseases, especially in the matter of the appointment of the inspectors. For instance, in Wisconsin, according to "Bee-keepers' Legal Rights," published by the National Bee-keepers' Association, the inspector is appointed by the Governor. In New York the Commissioner of Agriculture appoints the inspectors of bees. In Michigan, the Pure-food Commission; in Missouri, the State Board of Agriculture; in Nebraska, the Governor; in Colorado, the county court; in California, the board of supervisors of the county. In Utah the appointment of a county inspector is made on petition of a majority of the bee-keepers of this county. In New Mexico this is done by the Board of County Commissioners. In South Dakota the Governor appoints the inspectors; in Canada it is the Lieutenant-Governor in council under the recommendation of the Minister of Agriculture.

It will be noted that some of the States have county, some district, and some State inspectors. In the West, where there are many bee-keepers in a county, and where the number of colonies kept warrants the appointment of a man for the county alone, it will be seen that county inspection is a practical plan. In smaller States of the East, for instance, where the counties, of course, are much smaller, and where the number of colonies kept in a county is comparatively small, a county law is practically a dead letter and amounts to nothing. In some cases groups of counties are taken, called districts, or one man may have charge of the inspection throughout the whole State. The full text of the new Ohio law was given in our March 15th issue, page 171. This is a law with some modifications of the one that Dr. E. F. Phillips drew up and recommends. The great advantage of a law of this kind is that no special appropriation need be set apart for the inspection work, the State Board of Agriculture assuming the expense, at first at least. Legislatures can be induced to pass such a law when they would refuse if a separate appropriation had to be levied.

Indiana has a statute very similar to that of Ohio. The State Board of Agriculture is authorized to appoint a competent entomologist as chief inspector, who may have under him assistants. The regular State entomologist is logically the one to take this work.

Ohio is to be congratulated on having, as its State entomologist, Prof. N. E. Shaw, who, besides being an entomologist, is himself a bee-keeper. The bee-keepers of Indiana are also to be congratulated on having their State inspection work under the supervision of their State entomologist, Mr. Benj. W. Douglass.

WHAT IS BEING DONE IN INDIANA.

The second annual report of the State Entomologist of Indiana for 1908-'9 is just out, and gives a very excellent report of the work done by Geo. M. DeMuth, assistant in charge of Division of Apiculture, working under the State Entomologist. Our readers will recall the notice of Mr. DeMuth's work in the article by Walter S. Pouder in our Feb. 15th issue, page 111. It is very evident that Mr. DeMuth's work has been very thorough, and we are sure that he will do all in his power to check the trouble in his State. His report covers some 42 pages, containing a large number of exceptionally fine illustrations that show a good many of the details in bee-keeping as well as the *modus operandi* of inspecting an apiary.

After a brief history of bee-keeping in the State, a list of the honey-plants is taken up and discussed, with the dates when each plant blooms. One great hindrance to the development of the bee-keeping industry is found to be the use of hives from which the combs can not be readily removed for examination. This includes not only log gums and box hives, but neglected colonies, etc. An inspector is further hindered in his work in promoting successful culture of bees by the bee-keepers who give their colonies absolutely no attention or care, so that the combs are probably all built together. Mr. DeMuth rightly points out that one of the main causes of failure in securing a crop lies in not having the colonies in proper condition at the beginning of the honey-flow. The lamentable fact is that the bee-keepers who need this advice probably never read the bee-journals nor take the trouble to secure a copy of this report.

In this report, foul brood, both American and European, is fully discussed and differentiated. The American type is found to exist in 16 counties in Indiana, and the European type, formerly known as black brood, in 18 counties. A map is given showing the distribution of the diseases. The McEvoy method of curing is advised for both diseases, and in addition the inspector recommends disinfecting the hives. Caution is given against trying to winter diseased colonies or allowing such colonies to exist in a weakened condition in such a way that they may be easily robbed out by other colonies in the spring, and the disease thus spread. A discussion is also given of pickled brood, starved and chilled brood, dysentery, etc. Remedies for moths and other enemies of bees are suggested.

This report shows that Mr. DeMuth made 513 visits to 480 apiaries located in 22 counties. In all a total of 6036 colonies were inspected, of which 1431 were found to be diseased, either with American or European foul brood. Of the entire number it was necessary to burn only 58 colonies. Only 328 colonies out of the 6036 were kept in box hives. These, of course, could not possibly be treated. On this account it is unlawful to permit bees to remain in box hives in apiaries where disease is known to exist.

What has been found in Indiana will doubtless be found in Ohio. The State-wide law for the Buckeye State was enacted none too soon.

THE NAMES EUROPEAN FOUL BROOD AND AMERICAN FOUL BROOD.

WE frequently receive letters from our subscribers here and in Europe who claim that the names "European" foul brood and "American" foul brood should have been reversed, claiming that American foul brood is the prevalent disease in Europe, and that European foul brood is more widespread in America than in Europe. Some of our European friends claim that European foul brood is not even present in Europe, while others claim that it was recently introduced, and graciously give American bee-keepers credit for sending it over. In view of these complaints it may be well to reiterate the reasons why the Bureau of Entomology gave these names to the two diseases of the brood. It is evident that in some quarters the facts are not understood.

In the first place, the names were not given to imply the geographical distribution of the two diseases. In the preface to Dr. White's bulletin, Technical Series No. 18, Dr. Phillips says:

> Both diseases are found in Europe as well as in America, so that the names indicate nothing concerning the geographical distribution of the maladies.

It is obvious that a reversal of the names would not help matters any in this regard. Doubtless American foul brood is the prevalent disease on both continents.

The names were chosen so that the words "foul brood" would be included in both names. This was done primarily so that there would be no confusion in the laws in force providing for apiary inspection in the different States. Furthermore, the name "foul brood" had become associated with *Bacillus alvei* through the work of Cheshire and Cheyne, so that it was fitting that the words be retained in the name of the disease in which Cheyne, doubtless, obtained his material for study, European foul brood. In this country, "foul brood" meant American foul brood, and the best and most logical way out of the difficulty was to call them both "foul brood" with adjectives to distinguish them.

The qualifying terms were chosen chiefly to get some easily remembered names. European foul brood had evidently been studied by a European, Dr. Watson Cheyne, who described *Bacillus alvei*. American foul brood had been studied by an American, Dr. G. F. White, who for the first time called attention to the fact that another bacterium is present in this disease, and who has since established the fact that *Bacillus larvæ* is the cause of the disease.

The claim that European foul brood is not present in Europe, or even that it is a recent introduction, can not be admitted from the evidence at hand. All of the recent workers on the diseases of the brood as found in Europe report symptoms and results of bacteriological examinations which show that European foul brood is not only present but is well established, as shown by the frequency of such samples. It is true that many European bee-books do not recognize two diseases, and describe what we call "American foul brood," ascribing it to *Bacillus alvei;* but this indicates merely that the authors have copied the old beliefs concerning foul brood and have not taken into account the recent work here and abroad. Writers who have been writing of foul brood as being produced by *Bacillus alvei* may have some hesitancy about admitting that their past statements have been incorrect, especially if they have not had practical personal experience with "European foul brood." It must be remembered that some of the best European bee-keepers have long recognized two brood diseases. Among these may be mentioned Dzierzon, whose place in the front rank of bee-keepers will not be questioned, and whose observations are recognized everywhere as excellent.

Another point which should be mentioned is that it is unimportant whether or not our terms European foul brood and American foul brood are translated into other languages and used by foreign bee-keepers. Many terms used in bee-keeping by American bee-keepers are not literal translations of the equivalent German terms, for example. It is important, however, that the terms be defined clearly, so that foreign bee-keepers reading our articles on disease will know exactly what is meant. The two diseases are so defined, and there should be no confusion on that score.

Stray Straws

By Dr. C. C. Miller, Marengo, Ill.

In this climate there is no trouble with a dovetailed corner like 2A, p. 355. But I use cleats the whole width of the hive, and wouldn't do without them.

Several times I've been credited with saying that the queen might convey foul brood. I never said that—don't know whether she does. What I said was that the queen in a colony affected with European foul brood seems to have deteriorated.

A. I. Root, if you want cigarettes put out of business, get the women to vote. In Illinois, one woman, Lucy Page Gaston, has done more to oust cigarettes than all the men combined. [My dear old friend, Lucy Page Gaston is one of my very special friends; and I suspect she has had a good deal to do with our new Ohio law in regard to cigarettes mentioned in another column. I am right with you to a dot in working and praying for the time to come when women (especially the *mothers*) may have the right to vote on every thing that concerns the best interests of their boys.—A. I. R.]

The black-bee Macdonald-Holtermann controversy, p. 339, will never be settled so long as they discuss two different kinds of black bees. Italians are better than American black bees. They may be inferior to other black bees. [Has it been definitely proven that the black bee of England is better or worse than the black bee of America? We infer that the English bee is superior because of the fact that it is favored by so many English bee-keepers, while apparently the same race of bees (blacks) in this country is condemned and discarded by most progressive men on this side.—Ed.]

Autan is a new formaldehyde preparation used in Europe for disinfecting combs infected with foul brood of the stinking kind (American?); but it has no effect on the non-stinking kind (European?). [We have tried all kinds of drugs for disinfecting combs, and we are very skeptical about any of them being of any value whatsoever. The difficulty lies right here: If the drug is strong enough to kill the microbes it is strong enough to kill the larvæ or the bees. In talking with Dr. E. F. Phillips, of the Bureau of Entomology, we found that the experience of the government experts was practically the same as what we had years ago. We are firmly of the opinion that, the sooner bee-keepers give up all notion of drugs and medicines to cure brood diseases, the better it will be for the pursuit in general. Speaking about formaldehyde, we tried it thoroughly, and we have had reports from others, but we have yet to hear of a case where formaldehyde, formalin, or the same drug in any other name, has been of any permanent value in eradicating brood diseases.—Ed.]

I don't understand, Mr. Editor, your fear that an excluder may be needed to keep pollen out of sections when they are put over a crammed ten-frame brood-chamber, page 338. The trouble should at least be no less with eight frames, and the trouble with them is so little that I never think of using excluders. But the sections must be *filled* with foundation, else drone comb will bring brood and pollen into the sections. [Certainly, if a queen-excluder were needed on a ten-frame hive it would also be needed on an eight-frame. There would be very little difference in that respect. We only meant to suggest that possibly it might be necessary to put on an excluder; because, after crowding two stories of bees into a 1½-story, there would be a possibility that the queen would prove very annoying in the upper half-story, especially if extracting-combs were used. We are quite prepared to admit that, when running for comb honey, there is very little need of using excluders.—Ed.]

The rarity of laying workers preached by Allen Latham and the editor, page 345, amazes me. In this locality, and I suspect that I am speaking for many others, a laying worker is no such rare bird. I think I have had them every year. I may be "careless or ignorant," but I insist that laying workers are no proof of it. On the other hand, the diminutive queens that are blamed for the trouble are practically unknown here. Generally it is easy to say whether laying workers or a poor queen are present. When you find drone-cells occupied to the neglect of worker-cells, with more than one egg in a cell, and especially when you find queen-cells with a dozen eggs in each, you may be sure of laying workers. I am not sure I ever knew a case of laying workers without five or more eggs in a queen-cell, and I think I *never* knew a queen, even the scrubbiest kind of a scrub, to lay more than two eggs in a queen-cell. But I have known laying workers to lay quite regularly in worker-cells, and one egg in a cell. [We understand that you have hybrid bees. If you had among those hybrids a little sprinkling of the eastern yellow blood—that is, Holy Lands or Cyprians, we could readily understand why the laying-worker might not be a rare bird in your locality. Mr. Latham uses what we understand to be plain hybrids. We have used Italians mostly in all of our yards for years. With the ordinary leather-colored stock, that is, such Italians as come from southern Switzerland and northern Italy, the laying workers are rare indeed; but among the golden Italians, especially if that extra-bright color comes from Cyprians or Holy Lands, we expect to find now and then laying workers. It is hardly probable that you would find scrub queens in a yard run exclusively, or almost ezclusively, for the production of comb honey. In our queen-rearing yard, however, they bother some, especially when cells are given to colonies. —Ed.]

Bee-keeping in the Southwest

By LOUIS SCHOLL, New Braunfels, Texas

Cut comb honey, as described and illustrated so nicely by the editor some time ago, is receiving quite a little attention. Have you thought that it is only one style of *bulk comb honey?*

The Southwest Texas honey crop so far is the shortest obtained for a number of years, according to numerous reports received. The demand is strong, and prices are higher than usual. We, further northeast, have already secured a nice crop, however.

An automobile for out-apiaries has been our desire for a number of years. Up to now we have not found just what we thought we wanted. Then we were undecided whether we wanted to haul honey, etc., with it or not, or whether we needed only a runabout, and let the hired help do the hauling with wagons. Now it seems to be the latter. What do you think about it?

Bulk comb honey—yes, *bulk* comb honey—is the proper name. "Chunk" honey is very rarely used here, and some of "we-uns," at least, would rather not have that "chunked" at us by our Northern friends. The two are entirely different articles with us; and it will be very easy to use the proper name if it is remembered that ours is simply comb honey in bulk, hence *bulk* comb honey. After it is more extensively produced in other parts of the country it will be better known.

SOME OF OUR ADVANTAGES.

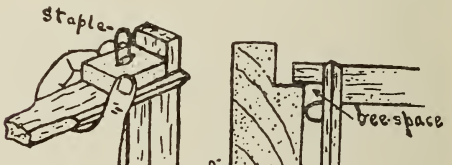
We have several advantages in bee-keeping that not all bee-keepers can have, although others are so situated that they might have them. One of the main advantages we have is the scattering of our apiaries so that we do not have our bees all in one or the same kind of location in one locality. One may experience a short crop, and even an entire failure occasionally, when thus situated; but entire failure is very seldom possible when apiaries are located in various and entirely different localities. Thus it is that we may have a shortage where we depend on an early spring harvest entirely. Were all our bees here or in similar places we might suffer. Instead, *we* pay all our attention to other apiaries in localities that obtain their harvest from summer or fall sources, leaving those of the first localities alone for the while. Or it often happens that rainfall is very light at a number of apiaries and plentiful at others, so that we can leave the former and spend all of our time with the latter, and thus obtain a good crop. Even local showers play a great part in a honey-flow in localities only several miles apart at times, so it pays to scatter the yards.

Our extensive business not only takes in the scattering of apiaries several miles apart in one part of the State, but we have gone further than that by having about half of our apiaries in an entirely different part of the State, several hundred miles away. Here, as well as nearer home, of course, the general practice of scattering the apiaries is carried out to take advantage of changed local conditions.

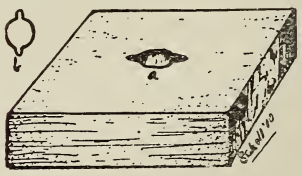
While we have almost an equal number of apiaries at each place, fourteen here in Southwest Texas and twelve in Central Texas, we never know which series will require most attention and give the largest honey crops. For instance, at this time it is very dry in the Southwest, and people generally are complaining of drouth and unfavorable prospects, while we have had heavy rains several hundred miles east, where our other bees are, and the prospects are the very best; therefore *we* are not complaining. That's an advantage.

SCHOLL'S NEW FRAME-STAPLE BLOCK.

The wooden blocks with a saw-kerf at each end, sent out for use in driving the end-spacing staples, have been very unsatisfactory in several respects. First, we prefer our



staples ⅜ inch from the end of the top-bar, leaving a passageway for the bees, and therefore eliminating the lumps of propolis generally found where the staples are closer up. Besides, this brings them out of the way of our finger-tips to a great extent when handling the frames. With the staple spacing further down, the frame is held more square and true. While the plain saw-kerf was all right in the hands of a careful person, most of our staples slanted either up or down in it, and we had to look for something more satisfactory. Nothing better could be adopted than the one shown herewith, for our boys now can't help putting every staple just where it ought to be. The block can be made of wood, but we have several of iron. Simply bore a $\frac{3}{16}$ hole ½ inch from the center, and saw two kerfs in this as shown. A rat-tail file is used for the metal ones.



Siftings

By J. E. CRANE, Middlebury, Vt.

Hive-stands recommended by F. Greiner, p. 149, Mar. 1st issue, are very satisfactory.

Whew! but don't they do business down in Texas in destroying foul brood the same as every thing else? See pages 77—80.

I don't know which I admire Dr. Miller most for—the nice things he says or the mistakes he sometimes makes. Both are comforting. See page 143, March 1.

Page 162, Mar. 1st issue, Mr. J. D. Yancey tells us how his bees gather honey from the leaves of the cotton-plant—that certain glands on the under side of the leaf secrete it. Now, it would add much to our knowledge if such honey could be secured in sufficient quantity to be analyzed and compared with that of flowers as well as with "aphis honey."

Prof. Gillette doubts the value of carbolic acid in keeping bees from taking poison, page 134, Mar. 1st issue. It might be observed that tarred paper, cedar, camphor, etc., seem quite effectual in keeping moths from furs; and I have found the past year that little branches of pine boughs serve a better purpose in keeping away currant-worms than frequent sprays of hellebore. I used nothing the past year but pine boughs, and the leaves were uninjured.

I was much interested in Prof. Gillette's lantern lecture on the structure of the honey-bee, p. 192, Mar. 15. I wish we had a good set of the slides, not only on the structure of the bee, but on combs, hives, and apiaries, as well as various tools and all that goes to make modern bee-keeping a success. I believe such could be used to good advantage by many during the winter season, and would add much, if properly conducted, to the education of those to whom we wish to sell honey.

SWEET CLOVER MORE AND MORE IMPORTANT.

That article on sweet clover, by R. L. Snodgrass, page 871, seems to me one of the most sensible I have ever read. He tells just how to manage to get a good stand most useful for the bees, and then enrich the soil for a grain crop, showing how to raise the clover for honey, and make it pay, at the same time, for grain and pasture. One statement he makes that should forever give it a right to a place in our country is that no other clover is such a soil-renovator as *sweet clover*. I notice in a recent number of the *Rural New-Yorker* that Mr. Chas. B. Wing, of Ohio, who has had a large experience in raising it, claims the same.

WHY COMBS ARE GNAWED.

Mr. L. B. Smith would have us believe that bees never gnaw combs except for a supply of wax, p. 76, Feb. 1. Well, perhaps they don't in Texas; but here in Vermont I find they will tear out one side of a piece of worker comb and build drone-cells in the place of the worker-cells, just because they *wanted* to.

GRADES MIXED BY A DEALER.

Mr. Holtermann, page 70, Feb. 1, refers to the folly of mixed grading; and what he says is true; but, alas! bee-keepers are not altogether to blame. One retail dealer complained to us the past season that our honey was not graded as well as formerly. We looked the matter up, and found the jobber had been selling him No. 2 honey for our best grade.

HIVES ARRANGED IN GROUPS OF THREES.

That method of arranging hives given by Dr. Miller on page 68, Feb. 1, is well worth remembering. I moved a yard during the winter, and intend to set the hives in rows, twenty in a row, in groups of twos and threes in the rows, and with good spaces between. Then it will be easy to find any particular hive. I think there is no more danger of the bees or queen missing the hive when three stand close together than there is when there are only two; but I doubt if it is wise to go beyond this number.

THE ONLY WAY TO STIMULATE THE USE OF HONEY.

One can not help wishing that those who never will could read Mr. Orel L. Hershiser's articles in GLEANINGS for Feb. 15 and March 1. In the last twenty-five years we have made tremendous advances along almost all lines of practical honey production, and yet how little has been accomplished in placing our honey in the hands of consumers in the cheapest and most practical way! I believe every considerable city should have some one person whose business it is to sell honey, both to retail dealers and to consumers direct, not as his own, but as the agent of bee-keepers, and accountable to them.

From our own experience I believe the amount consumed would be increased beyond our expectations, and at prices that would gladden the heart of the average bee-keeper. Left in the hands of the commission man, what would have become of the fruit industry of California? Organized fruit-growing pays, while we of the East can eat navel oranges to our heart's content, at prices that are not prohibitive. Organization is the watchward of the times, and those who can not organize are likely to be ground beneath the upper and nether millstones.

Conversations with Doolittle

At Borodino

QUEENLESS BEES DESTROYING EGGS AND LARVÆ.

"My name is Anthony, and I live a little out from Auckland, New Zealand, where we are having our winter at the time your bees are at their best, in summer. In 'Simplified Queen-rearing for the Honey-producer' there is a passage that reads thus:

Right here I should like to make an important statement, which all should bear in mind when rearing queens. It is this: It matters little, so far as the loss of brood is concerned, what you do with a queen when you separate her from her brood. The loss in egg-laying, the death to open brood, and the removal of fresh-laid eggs, will occur to the same extent, whether a queen is placed below a zinc honey-board, caged in the hive, or put into one's coat pocket; the bees feel that they are queenless, and thousands upon thousands of future bees are lost to the colony in the removal of young brood and eggs by the bees. Never remove a queen, therefore, excepting when absolutely obliged to do so.

"Now, Mr. Doolittle, if that passage is right, a whole lot that you Americans have been teaching us in regard to queen introduction, caging queens to prevent swarming, etc., must result in a financial loss."

"I note you say *if* that passage is right. Do you think it is right?"

"I am hardly competent to answer."

"Well, unless locality makes more difference than I think it can there are very few facts that even so much as *look* toward its support. But for years I have noted that with queen-rearing nuclei, or very small colonies which have only sealed brood, if the young queen is taken away from them after she has commenced to lay, and before any of her eggs have hatched into larvæ, the bees, in many instances, will remove all or nearly all the eggs in the hive, possibly keeping from two to a dozen from which to rear another queen. I should say that in fully one-third of the cases which have come under my observation this thing has happened. Now, I can not say that this same thing would happen in full colonies, for I do not practice taking a queen away from such at this stage of proceedings; but my opinion would be that it would not."

"How do you overcome such a condition?"

"By not removing the young queen until her first-laid eggs have begun to hatch."

"Why should any one wish to take her away sooner?"

"Of course you know that the apiarist who breeds queens for sale is just as anxious for the most and quickest returns as is the apiarist who raises honey to sell. For this reason, every short cut is valuable; hence, if the eggs which the young queen laid during her first day of laying would be sufficient to keep up the population of the nuclei she emerged in and was fertilized from, a saving of three days in the time of that nucleus could be made over that in which she remained laying eggs for four days, or till larvæ hatched. Thus a saving of three days to the queen-breeder with from 200 to 1000 nuclei would amount to hundreds of dollars during one year. With the cell-introduction plan it takes about two weeks on the average to turn out a good laying queen whose first eggs have hatched into larvæ, while, if the queen could be sent off after she had laid only one day, it would take but eleven days for each nucleus."

"But you have been talking only of eggs."

"Correct. And why I am often compelled to leave the queen till the first larvæ hatch is that, as soon as this comes to pass, *none* of the eggs are destroyed. If the eggs were removed the same after the first larvæ hatched, there would be no object in leaving the queen unless she were left until the brood from her eggs was sealed."

"Then you do not think the part about the bees removing thousands upon thousands of the young brood is correct?"

"From my experience in queen-rearing, which I have just been telling you, I can not; for, with the advent of young brood, all of the eggs are saved. And where *any* colony, from a nucleus up to the maximum colony, has young brood, I have never even once known of any of it being destroyed, if it would not have been destroyed had the queen been present. There come times, through a great famine of nectar, when the young brood will be sucked dry as a last resort, the bees looking to the continued existence of the colony; but in such a case a small part of the brood with a queenless colony would be more likely to be preserved for the rearing of a queen than with a colony that was in a normal condition with the exception of the food scarcity."

"Do you see any difference with a colony that you wish to restrict from swarming, whether the queen is taken away entirely or left caged with the bees?"

"Not along the line of the passage you quoted. After my forty-two years of bee-keeping I think that, under such conditions, neither eggs nor young brood will be removed in Central New York; and I believe the testimony of every observant bee-keeper living in North America would be the same. The difference between a removal and a caging of the queen, especially if the cage containing her is left near the entrance among the combs, would be that in the latter case very few, if any, queen-cells would be started by the bees; while if she is removed entirely the building of many queen-cells will be the result. When a lot of queen-cells are built over worker brood the bees must be shaken off before all of them can be found; and great care is necessary that all of the small ones, some of which may be no larger than capped drones, be not overlooked."

"And you think the passage quoted would not apply in queen introduction for improvement of stock also?"

"Not applicable in any case except with nuclei or very weak colonies that have sealed brood only, as I have explained. Of course, there is a loss in eggs at any time a colony is without a laying queen, but only to the extent she would lay if present."

General Correspondence

THE IMPORTANCE OF ALLOWING HONEY TO RIPEN ON THE HIVES.

Most Honey, Removed Soon After Being Capped, Not Equal to That Left on till the End of the Season.

BY W. P. SOUTHWORTH.

[On page 342, June 1, we published an article from G. C. Greiner, who advocated extracting several times during the season—not, however, before the combs were at least three-fourths capped. There is something to be said on both sides of the question; but we presume that no one doubts that honey is improved by being left on the hives as long as possible. The following article is from the manager of the Western Honey-producers' Association. It will be noted that Mr. Southworth has a number of arguments in favor of the plan of leaving honey on the hive until the end of the season.—ED.]

All bee-keepers are interested in the production of ripe honey, if they are striving to put the best honey on the market that can be obtained anywhere. This can not be done unless the honey is ripened on the hive. Bee-keepers are also interested in increasing the consumption of honey, and not much can be expected along this line until all will allow the honey to be ripened on the hive. There has been a good deal of nectar sold as honey, and the consumer who received it has noted the peculiar taste, to say nothing of its tendency to sour. He is, therefore, not anxious to buy honey again, and is suspicious of all that is offered him.

The first two years nearly all the honey came to us in small lots, and we soon noticed that there was quite a difference in the quality and density. This led to close examination and tests, and the cause was soon located. Some of the honey had been extracted too green. One such lot that was received in the fall of 1908 soon began to show signs of outgrowing the cans, and, in some cases, the cans could be heard to hiss if the day were warm and the room quiet. This honey was at once heated to see if the fermentation could be stopped. We succeeded, by warming it up well, and removing the heavy scum that gathered on top of the honey in the tank; but the flavor was ruined for table use. Two-thirds of the honey in these cans was granulated; but the part remaining liquid was very thin. This experience and many others led us at once to be on our guard against green honey. Last year we had to refuse a number of lots of honey that were offered, because the samples showed that the honey had been extracted before it was properly ripened.

We have been very much interested in the article that appeared in the *American Bee Journal*, entitled "The Two Cans of Honey," and we wish that every bee-keeper might read it, and also the note on the same subject by Mr. R. A. Burnett, of Chicago. The Agricultural Department at Washington has published a bulletin, No. 75, entitled "Production and Care of Extracted Honey," the price of which is 5 cts. I wish every producer of extracted honey would get one of these and study it carefully.

This subject of ripening honey on the hive does not apply to extracted honey only, but to quite an extent also to the production of comb honey. The delicate white sections that are removed from the hive early, and not marketed immediately, sometimes become damp in spots, drops of moisture even collecting on the cappings, and the nectar in the open cells becomes "bubbly" and runs out. These are indications that the honey, though sealed, was not perfectly cured or ripened.

The retail dealers are nearly all glad to get this delicate white honey; but if some of it ferments, the party that sold it to him will get something, when he calls again, that is not pleasant. I have had some experience along this line, both with the dissatisfied dealer and with the sour comb honey. Last season we had to melt up considerable comb honey that had begun to sour, and save what we could of it and the wax.

We can produce nice comb honey in favorable seasons, have it look nice and clean, and remain so for a long time; but we must not be in a hurry to take it off the hive nor to produce it close to old combs that have been used for some time for brood-rearing, as the bees are sure to take some of that dark wax to use in the cappings of the comb honey, especially if it is late in the season.

The climatic conditions have considerable to do with the length of time that it takes the bees to ripen honey. Last year the process was very slow in this locality on account of the continued cool damp weather. From a bulletin published by the Agricultural Department at Washington, entitled "The Chemical Analysis and Composition of Comb Honey," I note the following: "In the modification of the nectar by the bees several changes in the composition are produced. Among the most important of these is evaporation of the nectar to a water content of about 20 per cent. This is effected in the hive by the bees exposing the nectar in thin layers to the action of a current of air produced by the fanning of the wings. This evaporation is further hastened, according to some, by a process of regurgitation, the nectar being continually thrown out from the honey-sac on the partly doubled tongue, and then drawn in again until, by the movement of the air and the heat of the hive, the nectar is sufficiently reduced to be deposited in the cells of the comb.

"Another change of considerable importance which takes place while the nectar is in the honey-sac of the bee, and also probably during evaporation and storage in the comb, is the inversion of a considerable part of the sucrose in the nectar through the action of an inverting enzym secreted by the bees.

"Another modification produced in the nectar by the bees is the introduction of a minute quantity of formic acid. This acid

is wanting in the pollen and nectar of flowers, and is supposed to be introduced into the honey by the bees just before the capping of the cells. The formic acid thus introduced by the bees is supposed to act as a preservative, and prevent the honey from fermenting."

I am a great admirer of E. W. Alexander, and have one of the copies of the little book which contains his writings, which I have read often. So far as I have had an opportunity of working out his plans I find they are well suited to the conditions existing here in this locality of the middle West with one exception, and that is his method of extracting the nectar from the combs before it is sealed or even well evaporated. In Mr. Alexander's locality, and with his equipment and methods, this process may work out; but in this locality, and with the equipment that the average or even extensive bee-keeper has, I believe the plan is worse than a failure—it is a damage to the honey-market. I am of the opinion that no producer of extracted honey should try it unless he wants to enter quite extensively into the manufacture of honey vinegar, and I doubt if the nectar will make as good vinegar as ripe honey would.

Some bee-keepers favor the frequent extracting of the green honey on account of the apparent economy, believing that it will save them something in the way of investment for fixtures, such as extra supers, frames, foundation, etc. But from an economical standpoint alone, to say nothing of the quality of the honey, I find that it is easy to prove that having the extra fixtures, and allowing the honey to stay on the hive until the end of the season, and then making a business of extracting at one time, rather than be dabbling in it at intervals during the summer, is the cheaper method, for much more time is sure to be wasted at each small extracting than would be wasted if the work were left to be done all at once.

Some argue that frequent extracting of the honey from the combs stimulates the bees to greater effort to gather more to replenish their scanty store. On this question Mr. Dadant thinks that the more stores the bees accumulate the more they will continue to gather, provided they have the combs to store it in; that is, they are not unlike human beings in that they work the hardest when they are prosperous; but if their hard earnings are continually taken away they become discouraged, and are more likely to give up trying to get ahead.

However, leaving out this phase of the question, we all know that, if we are going to extract partly ripened nectar, we must have large open tanks to put the honey in for further ripening and a suitable building to hold the tanks. A ten-frame super complete with frames, nailed and painted, is cataloged at $1.15, and 1¼ lbs. of foundation is worth in small lots 58 cts. per lb., or 73 cts., and if we add the labor of putting in the foundation at 12 cts. per super we have a total cost of $2.00 per super. Thus if we are fitting up for 100 colonies we have a total cost of $200 for the one extra super over and above the equipment that we should have to have if we followed the other method. Now, I do not believe that we can purchase tanks and build a suitable house, in these days, for $200, that will last as long as those supers and combs.

But the all-important question with the consumer is the flavor of the honey that he is eating; and if we want him to eat more honey we must give him the thick delicious honey with the bouquet of the flowers in it; and we can not get this from nectar, nor can man ripen the nectar so that it will be equal to the honey that the bees have finished. There is a big demand for good honey, and I predict that the fields will be taxed to their limit to supply this demand when the bee-keepers will join efforts in producing the right kind of honey. I do not think that the consumption of honey will increase until a good article is put on the market almost universally.

Three years ago I extracted a lot of choice clover honey which I supposed was thoroughly ripe, and I wanted to get it out of the hives before it should become mixed with the dark fall honey. This honey was put into cans and pails very soon after it was extracted, and sold. Later in the fall I was trying to sell some more honey to a man to whom I had sold some of this choice early honey, and he objected very strongly, saying that the other honey that I had recommended to him so highly had fermented, so that he had to throw it out, and he had made up his mind after this that he would buy comb honey. This is where I got my first intimation of what it means to produce real good honey. Some of that same nice clover honey that I had in the house I noticed was changing rapidly, and it soon spoiled. I now know that I can produce good extracted honey, and I know that the whole bee-keeping fraternity can do it. The people will then consume our product without complaint.

Salix, Iowa.

CHUNK HONEY NORTH AND SOUTH.

This Kind of Honey Finds Ready Sale in the South Because the Market Demands a Cheap Honey.

BY A. F. BONNEY

I have had some experience with chunk honey in this part of the world, and I have traveled to no small extent in the Lone Star State, the last time about three years ago. In 1908 and '09 I put up some chunk honey in Mason glass jars, which I sold at ten cents a pound and charged the wholesale price for the jar, or, rather, what the farmer had to pay for the jar at the store by the case—38 cents for jar and honey, offering to take back the jar at a cent less on account of the loss of the rubber. I have yet to have the first one returned.

I did not put up a great amount of the chunk honey, using only such pieces as were white and clean and could not be extracted, with a few sections which were largely drone comb and not finished. However, I am satisfied that here in the North the handy bee-man may add not a little to his income by selling section, extracted, and chunk honey, though I doubt seriously if our people can be educated to ladle the latter out of a five-gallon can.

Difference of locality has all to do with the question of chnnk, extracted, or fine section honey. In Texas many of the Mexicans and negroes are allegories of poverty, though their sweet tooth is abnormally developed. They like honey, they want comb honey, but will not buy sections for lack of money, nor the extracted for fear it is adulterated. That is all there is to it. Of course the whites also buy chunk honey, just as I would to save a few cents a pound.

Of course, you may cut Texas from the map of the United States, lay it down on the map again, and find that it will cover the entire country to Canada, reach half way across the Pacific, or almost to the West Indies; but while it has an area of about 365,000 square miles it has a population of only about 3,000,000. Let us compare it with this portion of the North. Iowa has an area of about 56,000 square miles, with a population of about 2,400,000. Here in Iowa the average daily wage is at least three times what it is in Texas. To substantiate this I tell you that I have seen Mexicans setting out onions and making but 50 cts. a day, working twelve to fourteen hours a day; and the manager of the Devine drugstore, at Devine, Texas, said, when I protested, "Why, that is *good* for a Mexican."

I am not saying a thing derogatory to the great State which produced such heroes as Crockett, Bowie, and the handful of fighting devils who made the Alamo and Texas famous for all time. I am only pointing out to our over-enthusiastic big Tehana friend that size is not all there is in this world. Iowa is all fertile, but Texas is not, nor can it ever be. She has too recently arisen from the ocean. She has too much rock, gravel, sand, and too little water, for the precious fluid does not gush out in many places as it does in the park at San Antonio, at the head of the old San Pedro ditch. Were half the population of the North as poor as is half the population of Texas, we too could sell chunk honey; as it is, we sell automobiles, diamonds, and fancy section honey to our farmers.

If my memory serves me, there are not as many negroes in Texas as in Iowa; but the Spanish-speaking population must predominate over the whites, while said whites are of all nationalities, with the poorer class in excess.

To a person who has never traveled in Texas, Arizona, and other States where there are large numbers of the poorer Mexican laborers, it is hard to realize how dreadfully poor they are. Six bits a day is big wages, and just about double what they earn in Old Mexico. Had the North the comparatively scanty population Texas has, and the relatively large proportion of *very* poor persons, we, too, would, I do not doubt, be very glad to sell chunk honey as cheap as they do in Texas.

Along the Big River of the North the Texan bee-keeper comes in competition with the cheap Mexican honey. It is cheap, but not always poor in quality. I have bought it for five cents a pound—good comb honey in ollas, which afterward serve as water-jars.

Buck Grove, Iowa, May 6.

A CASE OF APPARENT DYSENTERY AFTER SEVERAL WEEKS OF FINE WEATHER.

Is it Bee Paralysis?

BY CATHARINE BEATTIE.

I am completely puzzled by the conditions surrounding one of my colonies, and wish to know if some one can give a solution of the difficulty. There is evidently some disease that destroys the adult bees in great numbers while every cell of brood remains perfectly sound. It is evident, too, that the disease is some form of bowel trouble, for the bees are spotting the bottom-board of the hive badly. Can it be dysentery? We have had three or four weeks of beautiful weather, when the bees could fly every day.

Thinking the trouble might be caused by the honey which was gathered last autumn, I extracted all of it and fed sugar syrup. At present, and for the last two weeks, these bees have had nothing but this syrup to eat in addition to the nectar which they have been gathering almost daily. Still, the trouble has not lessened, and the hive is now almost depopulated. It began as long ago as last January. At first there was no indication of the bowel trouble, though bees were dying in great numbers outside the hive.

Many of the bees, although not all of them, have greatly swollen abdomens, which are so much elongated as to give the appearance of a queen. There is a great and continuous disturbance around the entrance, the bees apparently fighting and throwing each other from the alighting-board. Sometimes those thrown off are plainly disabled and sick, while others fly away as if nothing were the matter. At first I thought it must be a case of robbing; but the bees around the entrance acted somewhat in the distracted manner that bees just queenless do, although the queen was present and laying, and every cell of brood is all right. Is it bee paralysis? If so, do you consider it safe to use the combs and save the brood, as Mr. Poppleton, of Florida, advises?

Later.—No one is spraying fruit-trees anywhere near; in fact, there is no fruit in the

vicinity; besides, the trouble began in the latter part of January, before there was a blossom of any description.

The bees at present are working on white clover, but they began on this only ten days ago. Previous to that time, I am confident that the only source of nectar was from the jewberry blossoms, a plant much like the blackberry, the fruit, however, being larger and more sour. All of the honey in the hive is very light in color and perfectly clear. Furthermore, it all has a delicate and delightful flavor.

Just recently another colony has become affected, but not yet so violently as the first; but I notice some swollen bees, with abdomens much elongated like small laying queens, in this second colony. No bowel trouble has developed so far; but there is the same continuous fighting and uproar around the entrance as at the first colony. This is one of the most marked features of the trouble—so much so that I am suspicious of a third colony where I have begun to notice a few bees fighting. There is no robbing.

The bowel trouble, which has not yet appeared in the second colony, seems to have ceased in the first, although the bees continue to die in great numbers, which loss, were it not for an unusually excellent queen, would have run the colony down to nothing.

My own idea is that the trouble is bee paralysis. Many of the bees are abnormally black and shiny. Both colonies are hybrids—about half-blood Italians. I believe that I notice a tremulous motion in the bees that crawl in the grass, unable to fly. The queen in the first hive has been caged ten days, and to-day I sprinkled the bees and combs with sulphur. Not knowing the nature of the trouble, I feared to distribute the brood among other colonies, although every cell of it is sound.

Thibodeaux, La.

[From all the evidence presented it seems reasonably clear that the trouble is bee paralysis. Yes, you can use the combs over again.

We would advise isolating the two colonies affected, and then follow out the Poppleton treatment as given in the A B C and X Y Z of Bee Culture, or our booklet, "Diseases of Bees."—ED.]

BUCKWHEAT-GROWING IN THE OZARK MOUNTAINS.

BY OTIS A. GRIFFITH.

I live in the heart of the Ozark Mountains, and I am a crank about buckwheat-growing. I sow my first crop the 10th of May, and then cut it about the 15th of July. After this I plow and sow again as soon as possible. The second crop does not always produce nectar. On the average I get about 35 bushels of grain per acre from the first crop, and about 25 from the second crop.

Buckwheat is a fine fertilizer, as it leaves the ground in much better condition than does red clover or cow peas. For years I have tried to get my neighbors to raise buckwheat, and I am always ready to give away seed; but the people who have always lived here seem to think that bees will take care of themselves out in a hollow log or any place else.

Nearly all of my neighbors keep a few colonies in log gums; and when the logs "get rich," as the expression is, they knock the top off and take out every thing, down to the cross-sticks. The people here work about four months out of the year, and fish and hunt wild game and wild bees the rest of the season. They are good-natured, and their wants are so few that they are the happiest people on earth. Every man owns his own place; each one has a rifle and a good squirrel-dog, and a fiddle with a horsehair bow.

This is the natural home of wild bees. I keep 100 good strong colonies which yielded 90 lbs. each last season. There are many different kinds of natural honey-plants that grow wild in the mountains.

Scholten, Mo.

ANOTHER FAILURE IN VIEW FOR CALIFORNIA BEE-KEEPERS.

BY M. H. MENDLESON.

There will be another failure in the honey crop in Southern California this season. We are having ideal weather for a honey-flow, but conditions are against us. The first part of the winter we had favorable rains until January and February to nearly March 15, which was a scant rainfall. The soil dried down sufficiently to check and dwarf badly the growth of the sages, and especially the alfilaria and other small producing flowers, the latter of which generally stimulates and builds up colonies for the sages. This dry spell checked breeding. Then came a good rain in March and some in April. Hot east winds followed, shutting off all prospects. What little swarming we have had will not fill up for the winter, and colonies that were left with abundant stores last fall will probably fill up for the winter. My scale hive has gained only about 7½ lbs. in a month; and should another east wind come, those that left their bees with limited stores will have to feed. These same conditions exist south to San Diego Co.

With all these bad prospects, buyers are still trying to press down prices, and it is time that we put a stop to this work.

Ventura, Cal., May 10.

WEAK COLONIES BUILT UP BY HAVING STRONG COLONIES PUT OVER THEM.

In the Alexander plan for making increase you recommend putting the strong colony underneath and the weak on top. I have tried both ways and I have much better success when I put the strong colony on top and the weak one underneath.

Coyle, Okla., March 15. ARTHUR RHOADS.

CONCRETE FOUNDATIONS FOR TWO HIVES, MADE WITHOUT MOLDS OR FORMS.

A PRACTICAL AND EASY WAY FOR MAKING CONCRETE HIVE FOUNDATIONS.

BY CHARLES RIVERS.

As there has been some discussion in regard to cement blocks to prevent the growth of grass and weeds around hives I take pleasure in sending a picture of my apiary, as I have had some of the cement foundations in use for the past three years. They do away with all kinds of annoyances around the hives; toads can not find a hiding-place, and if you take a frame out of a hive and stand it alongside it does not have grass, weeds, and spider-webs sticking to it when picked up. If you get busy, and the grass gets the start of you, the bees still have a clear alighting-place.

If the bees are wintered on summer stands, and the snow is deep, it is easily cleared away when there is a day warm enough for bees to fly.

I make the blocks five feet square, and they are plenty large for two hives. I cut away two or three inches of soil and fill in with cinders or sand, making it level from side to side, and two inches higher at the back than the front. I use 1½ sacks of cement to 3 of coarse sand; mix well dry; use water to make a thin mortar, and spread with a mason's trowel. The block will be 1½ inches thick, and will not crack if tempered right. The best way to temper them is to cover them with straw or green grass after the cement begins to set, and sprinkle well with water once a day for five or six days.

Mendota, Mo., April 19.

[This way of making the blocks saves material and labor. The cinders should be well tamped and wet down before the concrete is spread on. No forms are necessary; and as soon as one place is finished, another may be begun.—ED.]

AN IDEAL ARRANGEMENT FOR A POWER EXTRACTING-OUTFIT.

BY E. M. GIBSON.

I enclose a picture showing a corner of one of my honey-houses in which an extracting-outfit is located. I think the arrangement will appeal to all who contemplate using such an outfit. It will be noticed that the engine stands nearly as high from the floor as the top of the extractor, which is much more convenient to work with than if it were on the floor. The portion of the visible foundation on which the engine rests is concrete; and the rest, which extends to the cellar bottom, is rock. The heavy iron reaching across the end of the skid has a bolt through the center, which is five feet long, extending down into this rock foundation. There is one of these at each end; and when the taps are screwed down tight one can scarcely feel a tremor when the engine is working. This, with the exhaust-pipe extending through the roof, instead of allowing the explosion to exhaust in the house with its accompanying noise and gasoline smell, makes it much more pleasant in the room.

The white streak shown in the picture, passing up from the idler, is a cord which is

E. M. GIBSON'S POWER EXTRACTING-ROOM.

The starting, stopping, and reversing are accomplished by means of foot levers operated by the uncapper's foot.

fastened to the idler. It runs over two pulleys, such as are used for window-weights, one placed directly over the point where the cord is fastened to the idler, and the other over a point where it is fastened to a foot-pedal which is shown under the uncapping-table in easy reach of the operator's foot. The pedal can be worked almost instantaneously, while both hands may be busy with other work. The ratchets by which the tension of the belt is adjusted do not show in the picture. As soon as time will permit I am going to attach a foot pedal to the brake also, which will enable one to finish a set of frames without stopping his other work, which will be quite a saving of time.

With the kind of foundation here described, and with the engine resting perfectly level, it can not fail to last much longer than one having no foundation. Indeed, I think an engine set level and solid, and if used only for running the extractor during the honey-flow, and well cared for in other ways, will last as long as the average man will need one; and instead of the work being hard and drilling, it is made very light and pleasant; and with a good man outside and an intelligent boy or girl in the house, a large crop of honey can be harvested.

TOO MUCH VENTILATION NOT SAFE IN CALIFORNIA.

I want to sound a note of warning to California bee-keepers and others who keep bees in climates where the nights are as cool as they are here, about too much ventilating of hives. So much ventilation may be all right in sections of the country where the nights are as warm as the days; but in portions of the country where one needs a warm covering every night during the summer, a ⅜-inch entrance the full width of the hive is sufficient, with a sunshade to cover them well, and extending one foot in front to shade the alighting-board.

By the way, the entrance should front toward the east on this coast, as the prevailing winds are from the west, and bees can not alight flying with the wind if the wind is strong. Occasionally we have an east wind which is usually very strong; and the bees coming in are carried to the back of the hive, waiting for a lull, when they can steal around the corner. Those which do try to fly straight into the entrance do not alight but tumble in.

Returning to the subject of ventilation, I would say I have tried every means of ventilating that I have ever read or thought of, and they have all proven failures with me; and I have tested the matter so thoroughly that I believe they would prove failures in any locality where the nights are as cool as they are here; and for the same reason I would especially caution beginners about spreading brood *a la* Doolittle in sections of the country west of the Rocky Mountains. In fact, I question the wisdom of such a proceeding in any locality. The queen seems to be as anxious to build up in the spring as the bees, and she displays excellent bee sense; for as fast as the young ones hatch she again lays eggs in the cells so as to keep the brood-nest as compact as possible, showing no disposition to spread beyond

the capacity of the bees to cover; but as fast as they increase in numbers she enlarges the circle of eggs, and the same number of bees can keep more brood warm when compact than they can if scattered. As a rule, the bees will fill the empty combs inserted, with pollen and honey. From the fact that queens do keep from eight to ten frames filled with brood for months at a time is conclusive evidence that they do not need any forcing or coaxing by man.

"ONCE A ROBBER ALWAYS A ROBBER" NOT TRUE.

When nearly through with a tour of inspection of my apiaries a few days ago, to determine if the queens were doing their duty and if the bees had plenty of stores, they began robbing. I had been working with them two or three days, and they had not shown much disposition to rob, and perhaps I got a little careless and left some honey exposed; and when they did start I never saw bees more persistent. It was too warm to close the entrances entirely, and the robbers worked their way through any amount of straw, so I covered the hives with pieces of canvas while I made a robber-trap as explained by the editor, page 116, Feb. 15. I put three frames of honey in a hive after mutilating the cappings, and put two other hive-bodies on top of it, and, sure enough, I soon had them all in "durance vile." I did not have the heart to kill them, but let them out just at sundown, but warned them (mentally) that if they came "pesticatin' " around in the morning they would get sulphured; but they did not come—at least only a very few came, and began to show a disposition to rob at one of the hives they had got into the worst, and I placed the trap close to it and went on with my work, and had no more trouble, and but very few robbers were in the trap when I opened it the second night. This would seem to disprove the statement of "once a robber always a robber."

Jamul, Cal., May 5.

THE SOLAR WAX-EXTRACTOR GIVES WAY TO THE WAX-PRESS.

BY H. R. BOARDMAN.

[The writer of this article, the originator of the Boardman solar wax-extractor, while he does not by any means think that there is no longer a place for the solar extractor, has found that the press is much superior for old combs.—ED.]

I have become deeply interested in wax-production, not only as a bi-product, but as a possible special industry.

I propose at this time to present to the readers simply a press which I have used for some time in rendering wax, and which has been eminently successful.

THE PRESS.

It is simply two strong wooden arms with a common carpenter's bench-screw at one end, and a strong iron loop over the other end, adjusted to the height of the screw by wooden blocks. It is very simple and quickly constructed, and easily and rapidly manipulated. It gives great power, which may be increased by sliding the cheese nearer

H. R. BOARDMAN'S WAX-PRESS.

H. W. SUHRE READY TO START FOR AN OUTYARD.

to the loop, and at the same time it can not tilt over sidewise upon the screw as with the direct press. With the hand that turns the screw, the press may be easily tipped or tilted forward to any angle to allow the melted wax and water to run off into the can.

The picture represents the press as I use it, the wax being pressed out in the usual way. In front is the can to catch the melted wax. At the left is the boiler in which the comb has been melted on a stove near by. Near one end of the boiler is the dipper stuck in the handle. A section of the rim is straightened, giving a straight dipping edge. At either end of the press may be seen some of the finished product.

TO USE THE PRESS.

The top arm is removed for convenience, and a piece of strong burlap, reinforced by a smaller piece if necessary, is spread over the lower form of the press, and sufficient melted wax with plenty of water is dipped on to it from the boiler. The burlap is folded snugly over it, the press adjusted, and the wax pressed out at once while hot. Both the upper and lower forms of the press are slatted to allow the wax to run through.

Small pressings, about the amount of 8 to 12 frames of comb, have given the best results. Combs in frames that are to be rendered are put into the boiler, the cover put on, and the wax boiled, and steamed. I have boiled and pressed the refuse the second time, but I do not think it pays.

Collins, Ohio.

[The construction of this press resembles the latest press that Mr. C. A. Hatch used, with the exception that Mr. Hatch had a screw at both ends. The advantage in this would be that the beams could be kept parallel so that one side of the cheese would not be thinner than the other.—ED.]

RAMBLER AUTO USED FOR HAULING HONEY.

BY H. W. SUHRE.

I should like to give my experience in driving among the bees with a sting-proof horse. I have two outyards, and one yard at home; and for the last three years I have been visiting them with a two-cylinder 22-horse-power Rambler auto. I should like to advise all bee-keepers who have outyards to use autos. For my part I should not like to go back to the horse-drawn vehicle. I have my car arranged so I can haul 36 4¼-inch section supers, as the illustration shows. I can also use my car for five passengers by taking off the box and replacing the tonneau.

I find the metal spacers very satisfactory. I have put them on all my frames.

Brookville, Ind., March 21.

CAGING THE QUEEN TO MAKE A SWARM STAY HIVED.

BY CHRIS. GRIMOLDBY.

I notice on page 498, Aug. 15, last year, Mr. C. S. Ford says he had trouble in keeping his swarms hived, and the editor advises putting them down cellar for several days.

That will make them get down to business all right; but if there are many to put down cellar it means a lot of lost time right in the honey-flow. Now, my way is this: If a swarm will not stay hived I cage the queen and keep her caged for 24 hours on top of the frames or sections, whatever it may be; and at the end of that time I go to the hive, take out the frame of brood, and if any cells have been started I destroy them, shake a few bees in front of the entrance, and let the queen run in with them. This cures them for the rest of the season if they are given plenty of storing room.

Owen Sound, Ont., Can.

WHY IT DOES NOT PAY TO GRADE COMB HONEY CARELESSLY.

BY H. H. ROOT.

A few months ago we bought a car of comb honey from a dealer who supposed it was graded. When we opened some of the cases we found practically no attempt at grading, as shown by the illustration of eight sections, which, if we remember correctly, came from the same case. Probably none of this would have answered for fancy; but at least two of the sections might have gone for No. 1, and perhaps two more as No. 2, but why any bee-keeper wanted to put the other four sections in with the same lot is more than we can understand. Three of the sections in the upper row and the one at the left of the lower row should certainly have been sold as culls, or as bulk comb honey. The bee-keeper who indiscriminately throws together in the same case good and bad sections, is likely, instead of getting the fancy or No. 1 price for the good and bad, to get No. 2 or even a lower price for all the honey, some of which, perhaps, could have brought a much better price if it had been separately graded.

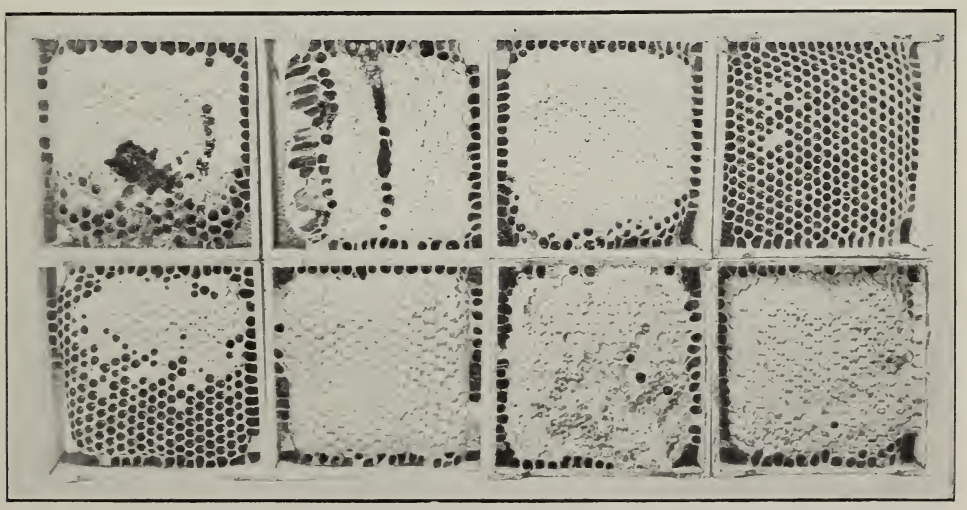
When a buyer gets hold of a lot of honey like this he is very apt to make up his mind to look elsewhere for his honey the next time, and the bee-keeper can hardly blame him. Injudicious grading means low prices every time.

ANCIENT EGYPTIAN BEE-KEEPING.

BY H. J. O. WALKER, LT. COL.

Mr. Fluharty is to be congratulated on the imaginative sketch that makes the cover of GLEANINGS for January so especially attractive. To come down to hard facts and your explanatory note on page 34, I should like to know where can be seen "the paintings upon the walls of their tombs and other edifices" that depict the ancient Egyptian art of bee-keeping; or if they can not be seen where are they even described? Not, I think I may positively say, in the British Museum nor in the museums of European capitals that I have visited—not in quest of such paintings, perhaps, but ready to mark them. Nor have I read of any instances except the following passage in Sir Gardner Wilkinson's *The Manners and Customs of the Ancient Egyptians:* "To the garden department belonged the care of the bees, which were kept in hives similar to our own (I remember to have seen them so represented in a tomb at Thebes)." As this book was written in or before 1837 it is almost certain that the vessel taken by the author for a bee-hive must have been in the form of a straw skep.

It is far more probable that, from the oldest times, Egyptian bee-keepers used the cylindrical hives made of clay or Nile mud



AN ILLUSTRATION OF SOME STRANGE GRADING.
These sections represent a considerable number classed as No. 1 in a car of honey.

and horse dung, with the addition, sometimes, of ashes, which are still fairly common in Egypt, Palestine, and other Eastern countries. In GLEANINGS for May, 1890, Mr. Baldensperger describes two apiaries near Alexandria, both of which had hives of this description. In one of these were 600 in six rows laid horizontally above each other. The keeper of this apiary held strictly, as he boasted, to the customs of his forefathers, and in his younger days used to pack his hives in boats and take them down a canal to the Nile, where he moved them gradually to fresh pasture grounds. This is known to have been an ancient Egyptian custom. It was practiced also in Italy and France. We may reasonably assume that the ancient Egyptian hive was of the kind just described.

I see no reason for supposing that Egyptian methods were any thing more than primitive. We only know that honey and wax were used in considerable quantities and for various purposes; that a vessel supposed to be a honey-vase occurs in Egyptian inscriptions, and that a commonly depicted emblem of sovereignty was the image of an insect which most bee-keepers will be ready to accept as the conventional representation of a queen-bee, known to the ancients merely as the ruler of the hive. Sir Gardner Wilkinson held that it was a hornet or wasp, and I found on inquiry that Mr. Wallis Budge, keeper of Egyptian and Assyrian antiquities at the British Museum, takes the same view, although, in my opinion, on quite insufficient grounds. In any case the recognition of a special kind of bee as being usually present in a hive does not take us very far.

There remains the old fable of the generation of bees from the decaying corpse of a bullock, credited to the Nile delta by the poet Virgil, which only tends to show how little was really known in those days of this land of mystery. That bees were domesticated in Egypt from very ancient times may be readily granted. If any evidence, pictorial or of other kind, exists to show that the bee-keepers' craft had advanced beyond the quite primitive stage I shall be glad to hear of it.

Leeford, Budleigh-Salterton, Eng., Mar. 2.

CARTONS FOR HOLDING CANDIED HONEY.

Honey About to Granulate Poured into Paper Cartons Lined with Honey-proof Parchment.

BY THOS. SUTHERLAND.

The illustration shows a small packet of white-clover honey put up in cardboard, which has a lining of vegetable parchment. This I have patented and put on the market in this country, and it is popularizing and increasing the sale of honey in the most surprising manner.

This package is intended to hold liquid honey in the first place, although on account of the fact that the honey should be run into the cartons just before it is ready to candy it does not remain in the liquid state very long. If these cartons are closely packed in boxes holding two dozen, the honey solidifies perfectly, and the cartons require only sealing and repacking in other boxes to be ready for market. It has always appeared to me that candied honey cut up into pieces and slipped into cartons, or wrapped in parchment, however carefully, will never have the taking appearance of these cartons that I have mentioned when filled with liquid honey which is allowed to solidify.

Blocks are used for the forming of the cartons, which work should be done, together

CARTON FOR CANDIED HONEY.

The honey is poured in just before it solidifies; and when solid the carton is sealed ready for market.

with the labeling, before the blocks are withdrawn, and then two dozen each may be packed in the stock boxes and held awaiting the honey harvest.

One might think that the filling of the parchment-lined cartons under a honey-tap rather risky and uncertain, due to the probability of honey getting down between the lining and cardboard, and also on account of the difficulty of lifting and moving a frail but heavy open-ended carton; but I use a small, strong, funnel-shaped arrangement which drops inside of the carton to a depth of 1½ inches and pushes the lining to either side out of the way. I also have two hinged wings which clasp the outside of the carton, making the lifting with the fingers and thumb a very safe matter; in fact, I find the filled carton just as easy to handle as a bottle or can, and occupies far less space for storage or in transit. Lastly, my experience is that they sell like hotcakes.

Rangiora, N. Z.

VENTILATING TO PREVENT SWARMING FROM OLD BOX HIVES.

The Plan Followed Years Ago.

BY DR. S. P. SCHROEDER.

I am thoroughly convinced that plenty of ventilation reduces the swarming tendency to a minimum. I am now in my fiftieth year, and my father was a bee-keeper before me. He used to raise the old box hives by putting an inch block under each corner, and we always found that colonies so treated stored more honey and swarmed less.

It is my opinion that the reason well-ventilated colonies swarm less is mainly that the air is drier; and I have observed that, in dry springs, bees swarm less than in wet springs—due, I think, to their wonderful instinct. Dry seasons are not conducive to the growth of abundant vegetation, and by instinct the bees know that the chances for a long continuous flow are not good; hence they store their honey away. If it rains often, on the other hand, they know that there will be an abundance of nectar in the future, consequently they get the swarming fever. I know that this is contrary to the old idea, which was that bees swarm more often in rainy weather because they are idle part of the time; but I reject this notion, on the ground that in the dry regions of the West bees swarm but very little whether they are idle or not, and in our dry springs this is true also.

Good bottom ventilation reduces the amount of moisture in the hive to a minimum, and puts the bees in nearly the same condition that they are in the arid regions of the West.

Every one has seen the pool of water on the alighting-board of a strong colony on a cool spring morning. The fanning of water from the nectar is one cause. If the ventilation is poor the air inside the hive gets saturated with this moisture, and the bees are placed in the same condition that all colonies are when it rains abundantly, hence they go to swarming. The well-ventilated colony is in this condition only while it rains, as at other times the air is dry.

We have a neighbor who keeps a few colonies in the old way. Years ago he conceived the erroneous idea that bees pulled the moths out and allowed them to fall on the bottom-board, and that the moths would then crawl back on to the combs. Accordingly, he made his hives 12 inches square and 14 inches high; and the bottom-boards, hinged underneath, enabled him to drop them down so that his hives could hang about 3 ft. above the ground. The colonies, while they had all this ventilation, swarmed but little. He used to place two ten-pound boxes on top of these colonies, and the bees would sometimes produce as much as 60 lbs. per colony in one season. In some cases comb would be built down under the hives as far as 12 inches, so that the bottom-boards could not be folded up in place all winter. In spite of this the bees would come out strong in the spring. The hives were kept under the south side of a bee-shed.

This all goes to show that plenty of bottom ventilation reduces the swarming propensity, and at the same time allows the colony to be kept strong.

Nashville, Ill.

WHY PLENTY OF VENTILATION KEEPS DOWN SWARMING.

BY JOE BLUNK.

On page 691, Nov. 15, Dr. Miller says that when he "zigzags" his supers his colonies do not swarm. This is plain enough; for with his two-inch entrance below, and the additional openings above, he has established a natural circulation, all the foul air escaping above long before any harm has been done to the bees; consequently they have all the fresh air they care for. Heated air becomes lighter in weight, and it therefore rises and escapes through the upper opening.

If there is only one entrance at the bottom the circulation, of course, is so sluggish that at times the air stops moving entirely; and after the bees have breathed it over and over it becomes foul, and it is then that the effort is made to increase the circulation by the rapid movement of the wings, known as fanning at the entrance. Some of the bees begin to get sick (may be their heads ache, as mine does after being all day in the foul air of the mine), and so they go outside, and hang on the front of the hive. After a while some more join the bunch on the outside, and they may stay all night, although a cold rain may have come up meanwhile.

When the condition of foul air keeps up too long, the bees become discontented and swarm. None of my bees hang out, nor do any of them fan at the entrance. My two-inch bottom-boards, with both ends open, p. 229, April 15, 1909, create this condition.

Moorland, Iowa.

COLONIES SWARM LESS WHEN HIVES FACE THE NORTH.

I have tried raising the hives to permit a greater circulation of air, and I find that it works all right in comb-honey production. Furthermore, I notice that those hives that are turned so that the entrances are to the north (this being the direction from which the most of our winds come) are the ones that do not swarm. Furthermore, I have no trouble if I shove the brood-chamber along on the bottom cleats so that there is an entrance at both ends of the hive.

A SHORT CUT IN FOUL-BROOD TREATMENT.

All who are troubled with foul brood should try shaking their bees into a nail-keg, small box, or any old receptacle that has had a piece of brood-comb placed in it, just as if a swarm were to be hived. Let the bees stay in such box until they have emptied themselves of the diseased honey, then put them back in their old hives on full

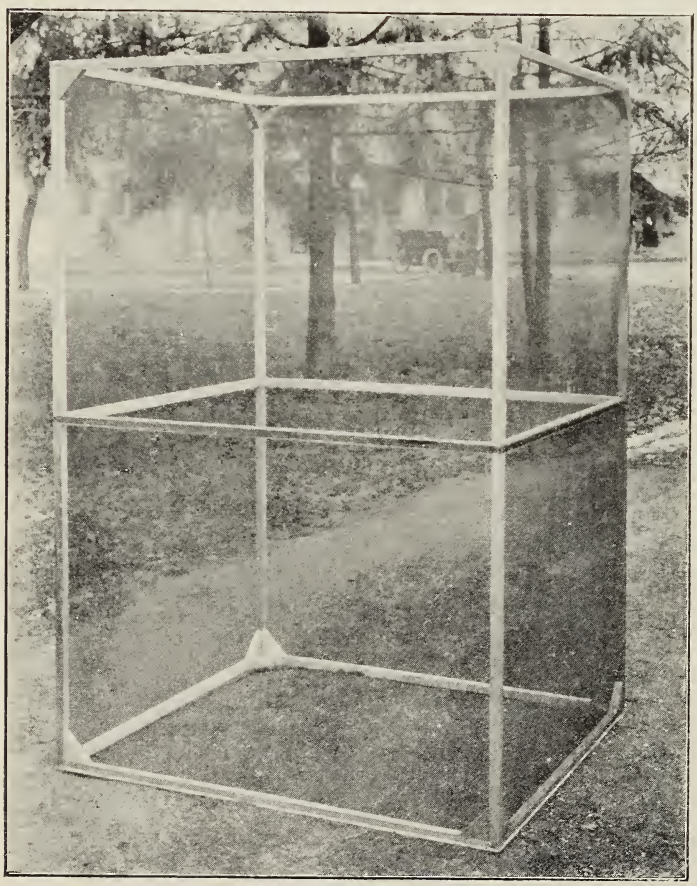
sheets of foundation or starters. Why not make a short cut in this way, and save time, foundation, hives, etc.? The old boxes or kegs could be burned afterward.

Campbell, Cal. M. I. PHILLIPPE.

BLOCKS UNDER HIVES DO NOT ALWAYS PREVENT SWARMING.

From my experience along the line of putting blocks under hives, away back in the year 1852, I think that those who rely upon this plan as a preventive of swarming are doomed to disappointment when conditions are favorable for swarming. In those days we had no frames nor modern hives—nothing but the log gums or square boxes, and the great bugaboo was the wax-moth. It was claimed that the raising of the hives off the bench by blocks placed under the corners would cause the moths to collect under the blocks so that they could be destroyed. Although I had good large box hives, my bees swarmed just as much as those that were left with only the common entrance.

Elwood, Kan. L. G. PURVIS.



A NEW AND LIGHTER FORM OF ANTI-ROBBER CAGE WHICH HAS BEEN USED IN MEDINA. SEE EDITORIAL, P. 367.

THE PHYSICS OF CONTRACTION.

BY LEO E. GATELY.

Nothwithstanding the repeated and forceful attacks upon this method of inducing or compelling bees to store their product where it may be available for other purposes than mere bee-food, I am disposed to view the subject in a vastly different light. In a great many if not the majority of localities, some form of contraction is indisputably a necessary essential to insuring satisfactory super work. With any amount of nectar coming in, and with skill unlimited, it is practically impossible to attract the bees into surplus receptacles so long as they have empty combs below.

A perfectly feasible but rather laborious method, accomplishing the object but eliminating the necessity for contraction, consists, when supering, in exchanging combs of brood from poorer colonies for empty combs that the honey-producing ones may have. A better plan is to have some system that will always result in getting the honey where it is wanted, without handling combs.

Swarms or new colonies placed in large brood-chambers and left to fill them before sections are given can hardly be expected to furnish any surplus in the best of years. Natural swarms should always be hived in contracted brood-chambers upon the original stands and supers that may have been upon the parent colonies soon after shifted to them. By so doing, super work will be uninterrupted, and a surplus secured equal in volume to that which would have been obtained if no swarming had occurred.

Up to the time of supering, the queen ought to be given unlimited room to secure all the brood obtainable. Just previous to giving surplus receptacles, brood-chambers can be reduced to a single tier of frames, and again enlarged when the harvest is past.

Those having used a hive with a super wider than the body, jutting out past the sides of the brood-nest, have undoubtedly noticed the partial or perhaps

complete neglect paid to the sections resting over wood instead of the combs. Clearly, then, the only logical method is to contract from the top, without reducing the supering surface of the brood-nest.

With a hive in which the brood-chamber is horizontally divisible, having two or more sets of shallow frames, contracting to the desired capacity necessitates only the removal of one of the hive divisions. There is little labor and complication connected with this method, and the extreme shallowness of the remaining hive division will seldom fail to throw at once the entire working force of bees into the surplus boxes. In this respect all brood-chambers consisting of but a single tier of frames are, to say the least, fundamentally deficient.

Severe contraction may, at the end of the season, result in small and inadequate colonies, and the course usually pursued is to enlarge again the brood-nest in sufficient time for the bees to build up for winter. Again, contraction is occasionally employed as a means of preventing or decreasing the production of brood when the workers would come to unseasonable maturity, thus becoming consumers. If colonies are greatly weakened at the end of the season through excessive contraction they can be united.

When desirable, either because of its cheapness or owing to its superiority as a winter food, contraction can be so managed as to leave the bees practically destitute of stores in the fall, and sugar substituted.

Ft. Smith, Ark.

THE EFFECT OF ODOR AND COLOR ON BEES.

How Insects have Altered the Flowers; Highly Flavored Honey Comes from the Strong-scented Flowers; Bees do Not Prefer any One Color, though they are Attracted More by Dark Shades.

BY PH. J. BALDENSPERGER.

[One of the most interesting features of GLEANINGS during the '80's consisted of the contributions of Mr. Baldensperger to its columns; but since 1893 he seems to have disappeared till now. In fact, the writer had almost forgotten him when he noticed a reference to him in Mr. Walker's article on page 383. By a strange coincidence, I was reading that reference to Mr. B. in that article when the junior editor brought me the manuscript of the following letter, asking me if I could tell what "Ph." stood for or if I could read it at all. The manuscript reminded me of the face of a long-lost friend or of a forgotten passage of music in a symphony.

Mr. Baldensperger seems to have lost none of his former interest in bees, nor of his ability to infuse others with that interest. He was one of a German family that went to Syria about 1860, and there he became interested in bees, as he here intimates.

About the last news we received from there was that Mr. B.'s brother was drowned at Jaffa while bathing in the Mediterranean Sea. About 18 years ago Mr. Baldensperger went to Nice, France, where he has remained in retirement so far as we could learn. The painstaking care peculiar to the Germans permeates all of Mr. Baldensperger's writings, and renders them not only worth reading but worthy of study.—STENOG.]

All progress in nature has been accomplished by the meeting of two distinct individualities—time and place, transporter and receiver. They all work together in harmony. One individual displays all in his power in attracting the attention of the other, and progress is the result.

By this law the innumerable plants extant have developed into what they are now. Insects have been the great agents for this development; and without them flowers and plants would have remained stationary with little or no perfume, depriving man of the manifold joys of modern horticulture. Insects, forced by the necessity of preserving their kind and enlarging their field of investigation, were the first horticulturists, and for centuries prepared the way and indicated the most delicate operations necessary to obtain new varieties.

Flowers attract insects by color and by perfume, and in return they fertilize plants and unconsciously cultivate flowers for their own use the next season. By these visits flowers have altered their form and hue in the course of centuries. It is they, too, that have given us the divers forms of fruit, and how is man thanking them in return? By the basest ingratitude — some, at least; for, be it said to their praise, many fruit-producers now protect bees; others persecute the bees and insects, which are charged with all depredations in the orchards without investigation.

It has been stated that Europe has about 4200 different plants, 420 of which are employed for commercial uses.

Only 3000 are said to have flowers, and these are classed as follows according to colors and perfumes:

1124	have	white	flowers	with	187	odorous.
951	"	yellow	"	"	77	perfumed.
823	"	red	"	"	84	"
594	"	blue	"	"	34	"
308	"	violet	"	"	13	"

Happily for bee-keeping in general, as well as for humanity at large, these flowers neither blossom all at once nor do they grow in the same place; moreover, they are not equally distributed over the continent.

For us bee-keepers the most interesting are such flowers as produce honey and pollen in due season; and I can speak about only such flowers as have come under my observation in the Alpine region which I have more particularly studied in the last eighteen years.

I here give such flowers as are more profusely distributed, neglecting the minor ones as being too tedious to follow in the scope of an article. I give the principal colors, as there are many hues between violet, lilac, and blue or rose, and classify them by numbers, beginning with the least represented, and writing in italics the names of such as are more apt to produce pollen. We have only one representative of the red color; three lilac, three violet, eight blue, nine rose-color, ten yellow, fourteen greenish-white, and fifteen white ones.

The greenish-white and white ones have very often such a small difference that I can fairly say half of our Alpine honey-plants

are white and the other half of other colors. Here they are:

Red, 1; *poppy;* papaver rhæas.
Lilac, 3; margosa-tree; Azodarichta Indica; thyme, thymus vulgaris; clover, trifolium.
Violet, 3; agnus castus, bitex agnus castus; peppermint, mentha piperita; melilot, melilotus officinalis.
Blue, 8; rosemary, rosmarinus officinalis; French lavender; lavendula spica; borage, borago officinalis; viper's bugloss; borago officinalis; common sage, salvia officinalis; thistle, carduus; common lavender, lavendula vera; endive or chicory, cichorium intybus.
Rose-colored, 9; *dog-rose;* rosa canina; heather, erica; peach-tree, amygdalus Persica; apple-tree, pyrus malus; quince-tree, cydonia vulgaris; sainfoin, onobrychis; lucerne, medicago; *rock-rose*, cistus cretiscus; radish, raphanus sativus.
Yellow, 10; prickly pear, opuntia vulgaris; broom, genista; dandelion, leontodon taraxacum; mustard, sinapis alba; *great mullein*, verbascum thapsus; vegetable marrow, cucurbita maxima; *marigold* or *pumpkin*, calendula officinalis; rochet, lepidum; cauliflower, brassica cauliflora; inule, inula viscosa.
Greenish-white, 14; common horehound, marrubrum vulgare; mignonette, reseda odorata; linden, or lime, tilia Europæa; *leak*, allium porrum; broad beans, faba; plum-tree, prunus domestica; *onion*, allium cepa; olive-tree (rarely gives honey or pollen) olea Europæa; chestnut-tree, castanea vulgaris; wormwood, artemisia absinthium; ivy, hedera helix; *saxifrage*, saxifraga; henbane, hyoscyamus; loquat, eriobotrya Japonica.
White, 15; *beaver-tree*, magnolia glauca; almond-tree, amygdalus communis; eucalyptus, eucalyptus globulus; cherry-tree, prunus cerasus; pear-tree, pyrus communis; hawthorn, prurius spinosa; American locust-tree, robinia pseud-acacia; pittosporum, pittosporum; orange-tree, citrus aurantium; *myrtle*, myrtus communis; clematis, clematis; white clover, trifolium; bramble-blackberry, rubus fructicosus; savory, thymus serpyllum; *rock-rose*, cistus ladaniferus.

The pollen gathered on those flowers by the bees has not always the same color as the flower, but varies often. The red poppy gives almost black pollen; borage has greenish pollen; pumpkins and others of the cucumber class have orange pollen, and so on, while many have the same pollen as the color of the flowers; as the marigold, yellow; the myrtle, white; the beaver-tree, white; the saxifrage, greenish, etc.

For our alpine region, May is the big pollen month, and it is most pleasing to the eye to contemplate the full colors and the intermediate ones represented in the rainbow—certainly not in the same order, as the bees' smartness does not reach so far, though, as we shall see, never a bee mixes two kinds of pollen in one journey, and generally she does not mix it in the cells. How often, when taking out such a beautiful comb of pollen, have I regretted being unable to show it to as many friends of nature as possible, as the brilliant hues soon become deteriorated as they are exposed to heat or dampness.

Different flowers, as everybody knows, give different odors, and some have greater powers of attraction than others, some by color, but many more by odor; and as the scent goes a considerable distance it draws the insects to the field of labor from very far. Most likely one scent counteracts another one, and bees neglect some flowers altogether where the strongest-scented prevail. In this case it is the perfume which forms the only attraction, and doubtless the sense of smelling is highly developed, though, as will be seen further on, the sense of sight is a great factor in the life of the bee. Certainly bees of weak hives remain near home and sip the sweet nectar from minor honey-plants, as their lives are too precious for the defense of their hives.

Nice, France, Jan. 7.

To be continued.

HONEY-DEW RARELY AN EXCRETION.

Some Authorities who Believe that Honey-dew is Generally a Secretion or an Exudation.

BY D. M. MACDONALD.

The editor of GLEANINGS loves to look at both sides of the shield, even when a controversy leads to views contrary to his own conclusions; and a favorite phrase of his is, "Let us have the truth, strike where it may." That is the true spirit in which this subject should be approached; because the question of honey-dew has two sides. In my original article, reprinted in GLEANINGS, p. 763, '09, I distinctly stated that there are two kinds, differing considerably in composition. I am chiefly interested in the question circling round the question of *excretion vs. secretion*. Dr. Gordon-Hewitt, on page 176, gives it as his opinion that honey-dew is an "excretory product;" and Dr. Phillips' conclusion is, page 177, "Most of it is in the nature of an excretion." The latter goes further, and asserts that I am mistaken when I state that the leaves "secrete a sweet liquid." On these points I join issue with both authorities. I know plants secrete such a saccharine juice. I have seen it. Seeing is believing. I have tasted it, and therefore I know it tastes sweet.

I support my own limited knowledge by the following trustworthy authorities. The Abbé Boissier de Sauvages, who, in 1763, first wrote extensively on honey-dew, described two kinds: "One species flows from the leaves of trees," i. e., it is then independent of any aphides.

From Leibeg I quote the following: "In a hot summer the leaves of the lime and other trees are covered with a liquid containing a large quantity of sugar. The *generation of sugar* takes place in the leaves."

Langlois observed that, during a dry summer, "the leaves of the linden-tree became covered with a thick and *sweet liquid* in such quantities that for several hours a day it ran off the leaves like drops of rain."

Dr. Darwin regarded honey-dew "as an excretion or a *secretion* from the surface of the leaves."

Sir J. S. Smith states that he frequently observed "drops of a clear liquid trickle from the leaves, and this *secretion* is of a saccharine nature."

Dr. Bevan, an excellent authority, recognized two sorts of honey-dew, "the one a *secretion* from the surface of the leaf."

The venerated Langstroth wrote, "It is very difficult to ascertain, at all times, the

special source of honey-dew, whether from trees or aphids; but the accumulated nectar may force itself through the *cuticle of the leaf*, thus producing honey-dew."

One of the best authorities on the sources of nectar is Professor Gaston Bonnier. In his "Les Nectares" he has described the production of nectar *without aphides*. Indeed, in many parts of Europe this honey-dew is so plentiful that apiarists transport their bees there. Here are Bonnier's conclusions:

"The excreted liquid of aphides is not equally sweet, and the bees harvest only that which is *very sweet*. They generally prefer the true honey-dew (miellée) which *exudes* from the leaves. I have often seen some trees, and even all the trees, covered with an abundance of miellée falling in small drops, *although there was not a single louse* on the higher limbs."

Now for some practical and scientific bee-keepers. Professor Cook states that he saw trees coated with drops of sweet liquid which could be there only if given off by the leaves. Mr. Loveday, a gardener bee-keeper, and a very observant man, in Vol. 26, *British Bee Journal*, writes, "Honey-dew either forms upon or exudes from the leaves of trees and plants; and if the trees are examined, few of them will be found infested with aphides."

Our late editor, Mr. Broughton Carr, writing in 1898, page 301, says, "Honey-dew is not the excreta or waste matter of the aphis, or green fly, but, on the contrary, is a saccharine substance or sweet juice which *exudes*, under certain atmospheric conditions, from the surface of the leaves of trees. Consequently there is no real analogy between the two substances."

Mr. Cowan, the editor of the *British Bee Journal*, records his opinion as follows: "We are perfectly aware that opinions are divided as to the source of honey-dew; but we agree with those who think it generally is an *exudation* from the pores of leaves under certain conditions of the atmosphere, although it may sometimes be produced by aphides. We have on several occasions examined trees producing honey-dew in abundance that were free from aphides."

One of your correspondents some time ago described his sample of honey-dew as "deliciously fine." Was this "bug juice"? I trow not. Professor Surface (with whom I am supposed to differ) on page 623, 1909, says, "I believe it is comparable to the production of milk." Does not that imply that it is a *secretion?* And, by the way, on the same page the learned professor, speaking of the cornicles, says, "It is not *always* secreted by this means," implying that it may be sometimes. Messrs. Kirby and Spence, followed by many of our entomologists, distinctly assert that clean limpid drops issue from these two setiform tubes. One authority I have consulted says, "They possess two horn-like processes from which exude small drops of a saccharine fluid called honey-dew, a favorite food of bees and ants." Dr. Hewitt maintains I am entirely wrong as to the cornicles; but if so I am erring in good company.

I can not do better than ask your readers to study Mr. Cowan's able summing-up of the discussion of the subject at the Conversazione in issues of the *British Bee Journal*, April 28 and May 5, and especially his conclusion that honey-dew *is* produced by exudation of the leaves.

Banff, Scotland.

TWIN NUCLEI VS. SINGLE NUCLEI.

The Advantage of Using Cells in Place of Virgins in the Raising of Queens.

BY M. T. PRITCHARD.

[In order to understand fully the article which follows, by Mr. Pritchard, the man who has charge of our north yard, the reader will need to turn to our editorial on page 336. Mr. Pritchard raises a very nice grade of queens, and a large number as well.—ED.]

Just now we are making up our nuclei for our summer's work, and the same problem confronts us that has for the last four or five seasons, which is, scarcity of bees. We have found that ½ lb. of bees is about the smallest amount with which we can start a nucleus and have it keep up its strength throughout the season. We have also found that, where this small colony is divided by a thin board partition, brood-rearing is not interfered with, and it makes a home for two queens as well as one; and since we aim to have about 350 virgins in the mating-boxes all the time (at the basswood apiary alone), the saving of 87 lbs. of bees is a strong point in favor of the twin boxes. To look at this number of queens every day is no small job; and when we can, by going to and opening one box, see two queens instead of one we have saved half the travel and nearly half of the time required.

Mr. Bain objects to the twin box on account of the difficulty of introducing virgins. This I do not take into consideration, because I do not believe in introducing virgins, for several reasons. First, the running-in of virgins is a slow job, requiring three or four times as much time as it would take to introduce the same number of cells, and the loss in introducing is much greater; and while it is true that a cell can not locate itself in the warmest part of the box, it is also true that queenless bees will always cluster around a ripe queen-cell, no matter what part of the box it is in, and a cell in a cluster of bees, even though it *is* a small cluster, will be better cared for, and will hatch sooner, than if it were caged in a strong colony.

I find it just as easy to destroy a scrub queen that hatches in a nucleus as though she hatched in a cage, and the work of caging the cells is all saved. And while it requires about 36 hours on an average for the cells to hatch after being introduced to the nucleus, yet I do not consider it a great loss of time over the introducing of virgins, because, in order to run in a virgin, the nucle-

us must be left queenless at least 24 hours, while the cell is introduced within an hour after the laying queen is removed.

That a laying queen on one side of the division will draw bees from the other side, I surely think is a mistake, as I have mated over 7000 queens in twin boxes, and never saw that happen; and I am thoroughly convinced that, to go back to single nuclei, would be a long stride in the wrong direction.

Medina, Ohio.

HOW TO SATISFY THE BEES IN THEIR DESIRE TO SWARM, AND YET KEEP THEM AT WORK.

The Shaken-swarm Plan Without Much Increase.

BY A. J. HALTER.

Bees that make preparations for swarming will lessen their activity as soon as queen-cells are started. This has a tendency to make the queen gradually ease up on laying until a swarm is ready to come out. The time occupied in anticipation often varies in accordance with weather conditions, the strain of bees, the age of the queen, strength of colony, yield of nectar, the amount of honey already stored, and the room still left for storage. The result of this lessening of activity during the swarming period may mean a serious loss in the amount of comb honey produced during a short season.

The use of an incubator does not do away with the inclination on the part of a hen, after laying a dozen or more eggs, to want to hatch her chicks; but by taking away the eggs and depriving her of the opportunity to sit she will continue laying. Why can not a *queen* be made to start laying and the bees kept in a state of activity instead of leaving them to cast a natural swarm? A practical bee-keeper can tell when a colony is making preparations to swarm by various symptoms; and, instead of waiting until the swarm emerges, he can make the proper manipulations to forestall such action.

At the opening of a honey-flow there are always some colonies not strong enough in bees to store in the supers. At the same time, others may be on the verge of swarming, while still others are in the normal condition to store honey abundantly. With a good strain of bees we need not fear many swarms until the first super is well started, or until about a week or ten days after the main flow is on.

HOW TO FORESTALL SWARMING AND MAKE THE BEES GO TO WORK.

When placing supers on Danzenbaker hives I contract the brood-chamber down to nine frames and a division-board. This makes it more convenient to get at the frames, and at the same time has a tendency to crowd the bees into the supers. As soon as a colony is found making preparations to swarm, all frames with the brood and honey, including the super and the bees that are in it, are given to some other colony; the brood is put in an upper story over a weak colony. We now have a "shook" swarm, or one that practically amounts to a natural swarm. In fact, I would treat a natural swarm just as I would this "shook" swarm that I have mentioned. Place six or eight frames with inch starters in a hive on the old stand; remove the super-cover and put the regular Danzenbaker winter cover over the hive-body, giving the bees lots of air as well as shade and plenty of room. In from three to five days after this has been done, and the combs are well drawn out and the queen laying freely, remove all but five of the combs and select four combs of the sealed brood from the upper story of the weak colony, placing two of these combs on each side of the five new combs left in this new hive on the old stand. Then put on the super—the less honey given, the better. The new combs have started the bees and queen so that all are active. The frames of sealed brood are for the purpose of strengthening the working force. The queen can then keep depositing eggs as fast as the bees emerge from the cells, and the honey will be stored in the super.

This plan has given very satisfactory results in this locality, especially with the shallow frames. It is a useless operation, however, if the colony possesses too old a queen, or one that is likely to be superseded. One should be careful not to leave any brood in the hive when making "shook" swarms, as I have not been successful when I have done this.

After all the weak colonies are built up by adding brood from the "shook" swarms, or when for any reason there are no more weak colonies, I bring a queen with several quarts of bees in a swarm-basket from another yard and run them on to the brood-combs taken from the said shaken colonies. These combs, however, should be free from bees before releasing the queen and the bees from the basket.

I find it profitable to leave surplus combs in the upper stories of some of the weak or late colonies, and at the end of the season after the late flow there will be from 30 to 50 combs of sealed honey. These may be distributed among the colonies run for comb honey, after the bees are put in winter quarters on ten frames. The strong colonies thus produce the comb honey, and the weak colonies help out on winter stores.

All queens that have passed through two honey seasons are destroyed immediately after the close of the basswood flow, or about the first of August, and ripe cells are given the queenless colonies. This gives a majority of young queens at the beginning of each season, and none are old enough so that they are likely to be superseded during the height of the main flow. This plan should not be overlooked when running for comb honey.

Akron, Ohio.

Heads of Grain

from Different Fields

Queens Mated from Upper Stories.

Mr. Root:—Please refer to the Chambers requeening-device in GLEANINGS, p. 178, 1909, and to the article by A. J. Burns, page 58, 1910, and give me your opinion as to the following described operations:

Mate a queen from above, using a flight-hole ⅜ inch in diameter through the rim of a wire and wood excluder, facing reverse of main opening, with mosquito-netting so placed on the under side as to allow communication at either side through the space between the hive side and the first wood slat of excluder. After the young queen is established, reverse the positions of the queens and bees, disposing of the older after assurance that conditions are satisfactory.

The conditions are that I am running for extracted honey, and natural swarms in April are not unusual, about ten days prior to locust bloom, which supplies considerable nectar just after May 1, under normal conditions, and is succeeded by the main flow shortly after May 15. Use three deep supers under the excluder, and two above, and have them all filled with bees, as I succeeded in doing last season, and give the queen-cells in West protectors to secure the laying of the new queens just at locust bloom, at which time I had the greatest difficulty with swarming last year. This contemplates the use of spring feeding or honey in combs as described by Mr. Doolittle. The reversing would be done when the bees were busy.

I take it that Mr. Burns' failure was largely due to lack of colony odor above and to the season of the year; but I should like to have some assurance on the subject. If covering the entire excluder with netting is necessary, it could be done; but the flight-hole would probably have to be larger, and I am not certain as to the size of the hole for mating the queen, although I have prepared several excluders, and widened the holes so as to make them ⅜ inch in their smaller dimension. My gravest doubt is as to the practicability of reversing the queens, and I had intended making the communication through the excluder entirely free after the new queen laid, for several days before reversing; but possibly the Burns article indicates the contrary. Will the procedure possibly prevent swarming? ARTHUR M. WHEELER, JR.

West End, Virginia, Jan. 20.

[This matter was referred to Dr. Miller, who replies as follows:]

To begin with the closing question, if the young queen becomes established in the lower story, there ought to be no fear of her swarming that season. No more ought there to be any fear with the Chambers plan, page 178, 1909. This on the general principle that, if a young queen does not swarm until she begins laying, she will not swarm at all her first season, provided she remain in the hive where she was reared. And it probably matters little whether she may have been reared in the hive from the egg or introduced as a virgin.

Mosquito netting is quite commonly understood to be of cotton material; but that would hardly work in the present case, and no doubt wire cloth is meant, for that may also be used as mosquito-netting.

The failure in the case of Mr. Burns ought hardly to be laid to the season, provided the original queen were old, for fall is the usual time for superseding, or at least toward the close of the harvest. In another respect the season might be blamed; for an interloper is likely to have kinder treatment during a flow. The suggestion as to lack of colony odor looks reasonable. Mr. Burns allowed two openings, which together were less than a twelfth of the upper surface of the hive, and these openings were partly closed by excluder zinc, while Mr. Chambers allowed mostly opening, the air above being thus of the same odor as below. Mr. Burns also allowed free passage for the bees from the very first; and with a vigorous queen below, a worker of an inquisitive turn going up would not feel kindly toward a strange virgin. While Mr. Chambers gave free passage for air, he gave at first no passage for bees.

The ⅜ hole would be plenty large for the queen, and probably also for the bees. With entirely free communication between the two stories through the excluder for several days after the laying above, and before reversing, there ought to be no trouble upon reversing; yet the whole question must be submitted to the bees before you can be sure.

Chickens Eat Nothing but Drones.

Allow me to add to the article by Lewis Efaw, p. 328, May 15, in regard to chickens eating drones. My brother and I have each a flock of chickens which keep the undesirable drones cleaned out. We have to use wire fencing around the colonies we wish to save, to keep the chickens out. We have watched the chickens many times, and with glasses too, but have never caught them eating any thing but drones. We have also tried different breeds of chickens, but the bees soon chased away all colors but the buff.

I am tending a good many of my neighbors' bees, and I have found several cases of pickled brood. Is it customary to shake as in foul brood, or do you just take out the affected combs? Would the sealed combs of honey be fit to leave in or to use for feed?

I have access to all the bees within 1½ miles of my apiary. If I were to Italianize all the bees within that radius in June, and then again next August, and should I give them *another queen*, would I then have pure-bred queens? I should like to buy one or two breeding queens and raise my own.

Clymer, Pa., May 23. S. W. UBER.

[It is a question whether it is profitable to allow drones to become so numerous as to make good feed for chickens. My impression is that it would be cheaper to use full sheets of worker foundation and stop the useless breeding of drones and buy chicken feed.

I do not know exactly what pickled brood is. The probabilities are that most cases of so-called pickled brood are nothing more nor less than ordinary dead brood. It may have been chilled or overheated, or it may have been poisoned during the spraying season. As a general thing a colony suffering only from pickled brood will soon clean out its dead and start new and healthy brood. On the other hand, pickled brood often looks very much like the European type of foul brood. If you have any of the dead brood of any sort in your yard at the present time you had better send samples of it to Dr. E. F. Phillips, Bureau of Entomology, Washington, D. C., for examination of the bacteria.

If you introduce Italian queens the second time, as you describe, and allow no queens to be reared in the apiary, you would have pure stock; but the probabilities are there would be some queens reared in the hives, and these would send out drones having some black blood, in all probability. If these queens survived the winter they would send out the same kind of drones. However, your Italian stock, to all intents and purposes, would be pure.—ED.]

Chickens do Not Eat Worker Bees.

On p. 328, May 15, chickens are mentioned as eating drones. I think that, if closely watched, you will find they nearly always eat drones only. I saw a chicken eat 35 inside of about 15 minutes one day. He was there for a much longer time, and would go from hive to hive, and never made a mistake day after day.

CELLS STARTED IN LAYING-WORKER COLONY.

My cousin had a queenless swarm this spring that developed laying workers. He looked the hive through several times, but could not find a queen, and there was no worker brood at any time this spring; but the bees started queen-cells and hatched a queen—another proof that bees steal eggs.

I had a swarm that escaped from a hive with an entrance-guard misplaced. The same morning I refastened the guard and left it for ten or fifteen days, then found plenty of eggs in the hive, proving that a laying queen was present. It was the first swarm, and I suppose the old queen went; so it looks as if the young queen became fertilized in the hive.

OLD AND YOUNG QUEEN IN THE HIVE DURING A HONEY-DEARTH.

I had a weak queenless swarm last fall after the honey-harvest was all over. I gave them eggs, and they started queens. Later, just before the queen

hatched, I gave them a laying queen. Six weeks after, I looked and found both the old and young queen laying, and that with practically no honey coming in—something a little unusual.

Do beans ever yield honey?

Marshall, Mich., May 21. G. F. PEASE.

[See answer to Uber.

It is not uncommon to find cells started in laying-worker colonies. The bees seem to know that conditions are not normal, and they will make abortive queen-cells. The larvæ in these cells will develop about so far, some of them will die, and others will reach maturity; but of course they will be only drones and rather overfed drones at that.

It is not uncommon to find an old and a young queen in the hive at the same time, even after the honey harvest. If the old queen is failing, the young bees and the new queen will very often tolerate the old mother; but as a general rule she will be found missing toward the cooler part of the fall. —ED.]

A Hive-Body Filled with Sheets of Foundation Placed Below the Brood-Chamber to Prevent Swarming.

I have read about some of the late devices for preventing swarming by giving room below the brood-chamber. Having tried different plans I very soon learned that an empty hive-body would give room, and in some cases retard and perhaps prevent swarming. If the lower hive is provided with drawn comb it will be filled with brood and honey, and the supers neglected. I think the cleated affairs would be expensive for just this purpose.

A few years ago, while I was working on this subject, the full set of frames with full sheets of foundation suggested itself; and while I tried only a limited number the results were satisfactory. I reasoned this way: If a colony needing more room were given foundation above and below the brood-chamber the bees would work above rather than below the brood from choice, and give the desired room below the brood. I would not leave the foundation below any longer than necessary, as all supers, etc., should be removed when the honey-flow is over. These frames of foundation may be used as brood or store combs after accomplishing their anti-swarming purpose.

Oswego, N. Y., May 7. F. H. CYRENIUS.

Another Defender of the Black Bee.

I have read Mr. Macdonald's article, page 296, May 1, and can sign my name to every word of his defense of the black race, for this country as well. I have had black bees for thirty years, and have had no trouble from wax-moths. When asked what I do to keep the moths from killing the bees, my answer is, "Nothing." I see to it that the colonies have enough honey and a good queen; and if any colony then allows moths to nest in the hives in sufficient numbers to harm them I should want that colony to be killed, any way, for I would not consider it worth any thing.

My bees are easy to handle; are vigorous; they swarm very little; and, although I am not in a good locality on account of so much cultivated land, I have secured in fair seasons 100 lbs. per colony. Well, I have kept improving my stock while several of my neighbors have introduced Italian blood only to their sorrow. There are many large bee-keepers who keep only black bees, and they are well content to leave good enough alone and say nothing about it.

Elk River, Minn. G. D. HEURING.

The Non-swarming Devices Found Satisfactory.

On p. 295, May 1, is shown an "anti-swarming device" said to have been invented by Mr. Junge. I wish to say that I have used this device in my bee-yard for a couple of years or more. I use slatted fences spaced $\frac{7}{8}$ inch in a 5⅜-inch super, the super having four 1¼-inch holes on each side covered with screen wire. There is also a shutter to close down over the holes in cold weather. I have tried these devices, without the slatted fences, using the four-inch plain separators instead, and pushing the hive forward on the bottom-board so as to leave an opening at the back for ventilation. I am using in some of these a ½-inch space between the separators. So far as I have used these, no swarming has taken place from any hive under which they have been placed; but I would advise going slow on the proposition. The advice on page 278 is good.

The opening of the non-swarmer shown on page 299, by Geo. H. Bedford, is, in my opinion, too large; and when the honey-flow stops it is an invitation for robbers to commence their work.

Dunlap, Wash., May 11. M. Y. CALCUTT.

Pollen from Frosted Flowers Made Trouble.

I think that B. I. Gilman, p. 248, April 15, will find that the trouble with his bees was the early pollen gathered. All of the pollen was used up during the honey-flow in September and October. That honey was from white chaparall, which yields no pollen. After this there came a hard freeze that killed all the flowers, and the bees got no more pollen until February: then they got some from mistletoe and some other small shrubs that were badly frosted; then the trouble began. The voidings looked like pollen grains mixed with water. It did not resemble the dysentery that I have seen up north. The difficulty disappeared with warm weather and lots of flowers, but left some colonies weak. It was worse with the blacks.

Moore, Texas, April 26. T. HOLMES.

[There may be something in your statement to the effect that pollen from frosted blossoms would cause trouble. We never heard any thing of the kind before.—ED.]

Do Queens from Swarming-cells Cause Deterioration?

I am pleased with Alexander's abrupt, convincing style of writing. One thing he says I can't understand—namely, "Bees deteriorate when queens are reared from swarming-cells." Has this question been discussed? If so, when? It may be true, but I want to know his explanation of the matter.

Chatham, Va., May 4. BRUCE ANDERSON.

[There was some discussion on this question at the time Mr. Alexander's statement was first published in these columns. As we remember it, Mr. Alexander explained his position by saying that swarming-cells had too much of a tendency to develop a swarming strain. Bees given to swarming are not profitable. He thought it much better to breed non-swarming strains from cells the larvæ of which had been well fed out of the swarming season.—ED.]

A Queer Place in a City for a Swarm to Locate.

During the noon hour of July 10 a swarm of bees suddenly appeared on East Market St. and entered a storm-water-catch basin through an iron lid having several holes inserted to allow water to enter. The location in question was about 100 feet east of Main St., in the business center of Akron, a city of 60,000 inhabitants. Being in the vicinity at the time stated, my presence was requested; but the queen had entered before I arrived on the scene. For the time being they certainly were masters of the situation. Vehicles, automobiles, and pedestrians all shared alike in making their immediate presence elsewhere; nor did they yield when a policeman arrived with a big stick and a fine polished badge. After all had quieted down, the iron lid was pried up and the bees were hived in a box to be removed to a more remote locality.

No doubt bees always seek a location convenient to water; but they were unwise in making their selection on the side of a street opposite where a saloon is located.

Akron, O., July 30, 1909. A. J. HALTER.

Who Pays the Cost of the Cans?

When a producer of honey sells his product, must he add the cost of the cans or lose that amount? I have asked several bee-men. Some say add on the cost, and some do not.

Arnim, Texas, May 7. A. F. KEMP.

[As a general rule the producer furnishes the cans. When he makes a price on his honey, that price, unless no definite statement is made to the contrary, includes the package. This is true of comb honey, and in nearly all cases it is a rule with extracted.—ED.]

Our Homes

By A. I. Root

Rulers are not a terror to good works, but to the evil.—Romans 13:3.

I am not come to send peace on earth; I came not to send peace, but a sword.—Matt. 10:34.

Yesterday, May 19, at the State conference of the Congregational churches of Ohio, at the annual meeting held in Kent, Rev. W. L. Beard, District Secretary of the American Board, who has recently returned from a trip to China, gave us the following facts in regard to sending cigarettes over to China. See Home papers in our last issue; also page 324, Gleanings for May 15, 1909. Well, you may be sure I not only got as close to the speaker as I could conveniently, but I listened with unusual attention to what he said about the cigarette trade. Recently in Foo-chou, China, a city with over a million population, the American Tobacco Co. undertook to develop a trade in their brand of cigarettes. First they sent a good man to canvass the city, with samples; but he was unable to find a single dealer who would take hold of them. (Dr. Ament, just before he died, told us, you may remember, that a most wonderful change is now taking place in China.) The salesman reported to headquarters his want of success. Then they sent a better and more experienced man (great God! think or it—"better and more experienced" in what?). Well, this man failed also. Then they sent out a third one—the best man they could find, and said, "Surely *he* will get our business started in Foo-chou." But he failed likewise, and cabled back for further orders. They told him, before deserting the field, to take a great quantity of cigarettes and scatter them broadcast among the children. The *children* would smoke them, as they did not know any better, and in this way they would "create an appetite." They worked along the line outlined by the fellow who was making an address at a convention of saloon-keepers when he said, "Gentlemen, nickels spent now among the boys in creating an appetite will bring in good round dollars later on." So this experienced salesman employed a dozen runners to go about the city and *give* cigarettes to the children! They reasoned that, when the children got a taste for them, they would go to the dealers with their pennies, and thus induce them to keep in stock goods that were urgently called for. But, may God be praised, they failed even in this. With all their shrewdness and persistency the great American Tobacco Co. had not caught on to what the *missionary* is doing. Even the Chinese *children* refused to accept them, and others took their free samples and trampled them in the mud before the eyes of the distributor. Dear friends, our prayers and my own poorly worded petitions to the wise and kind Father were answered, and I and the rest of you *did not know it.* Once more may God be praised; and now a verse of that beautiful hymn comes bubbling up in my soul again—

Hail to the brightness of Zion's glad morning,
Long by the prophets of Israel foretold!
Hail to the millions from bondage returning!
Gentiles and Jews, the blest vision behold.

But this is not all, dear friends. This missionary said he well remembered the time when the leading officials of Foo-chou said they did not want any more missionaries; they had caught a glimpse of what was going on in America and the rest of the world, and they were ready to adopt new methods of doing *business:* but when it included "*missionaries*" they said, "No, no! we do not want them—haven't any use for them. If you will take the whole lot who are here already, and take them away and send them back, we shall be a great deal better off."

They made this statement, put in different form, at every turn; and I do not know but many of the missionaries were a poor discouraged lot. They kept on, however, working and praying; and later on the Y. M. C. A. was established in Foo-chou, and I presume in other Chinese cities too. The Y. M. C. A. seems to have obtained favor, as it has in thousands of other places where other lines of missionary work have failed, and now we have open doors for the spread of the gospel of Christ; and not only "open doors," said Bro. Beard, "but the doors are pulled clear off the hinges, and carried away. They have no more use for them,"

And this reminds me that it is not only in Foo-chou where cigarettes are ruled out by law, but the whole great nation of China, with its *four hundred millions* of people, has passed an edict or law to the effect that no man, woman, or child under 25 years of age shall use the baneful thing. Why, come to think of it, China—yes, heathen China (as we have been wont to call it) has outstripped the United States in this much-needed reform.

"But," says some one, "does China *enforce* the law? We have laws in the United States; but what is the good of laws while we have police and mayors who are not in sympathy with those laws?"

Just listen while I tell you how China does things. You know about her banishing opium and the opium-dens. Well, in and around Foo-chou they used to have great poppy-fields—fields of beautiful poppies—beautiful if one would just use his *eyes* and did not stop to think. China has not only ruled out the opium-dens, but she has ordered her people to *stop growing* poppies. When Chinamen of wealth were making great fortunes in growing opium they were not inclined to obey the law. They said, as some people say here in America, "It is nobody's business what crop you raise on your own land." But the government sent soldiers and mowed down the poppies. The owners, with their money to back them,

were stubborn and contrary, like some of the saloon-keepers in dry towns in Ohio. But the Chinese officers said, "Here, don't you plant any more poppies or we will take care of you." Once more, however, like the saloon-keepers of Ohio, they gradually started in the business again. I think they were warned three times to obey the law; but after the third offense, these offenders, about half a dozen of them, were arrested and brought into the city; and to set an example before others, the Chinese officials did what? Why, they *beheaded* the whole gang of rebels—rebels against good government and common sense.

Now, I had said "amen" to every thing else in Bro. Beard's talk; and I was just ready to clap my hands where I heard these six or seven men were brought to punishment; but when the speaker said they were all beheaded I did not clap my hands with the rest of the crowd. I had raised them up, and was almost ready to bring them together; but when I thought of such a sudden and awful method of bringing an impenitent soul so suddenly into the presence of his Maker I hesitated. I *am* glad those men were punished; and may be under the circumstances it was best for all concerned to do this, for since then there have been no more poppy-fields flaunting their beautiful colors in and around Foo-chou. If those men could have been shut up for life or for a term of years while the Y. M. C. A. took them kindly in charge and taught them how Christ Jesus left his throne in heaven and came down to a suffering and sinful world, is it not possible that one or more of those rebellious citizens might have been made *a good man?* The Chinese way of reasoning seems to be along the line of that old adage, that "the only *good* Indian is a *dead* Indian." Well, friends, what is it that we need to-day here in our own nation to teach men to reverence and respect law? Shall we take off their heads? God forbid; but something should be done to make the law *more* of a terror to evil-doers. Instead of taking off their physical heads by law, let us prevent mayors from being any longer the "heads" of our great cities—that is, when they absolutely refuse to live up to their oath of office. We were informed at the conference that men who love darkness rather than light because their deeds are evil have just succeeded in defeating the Black bill—a bill to remove mayors and other officials from office when it is evident that they do not propose to enforce law. Our conference passed a resolution regretting that this good and righteous bill should have failed for the time being. But it only puts us back a little. We *shall* prevail in the end, for we *are* "marching on."

On page 363 of our last issue I said I had received a copy of a law recently passed here in Ohio. See copy of it on next column.

May the Lord be praised that we have a Governor here in Ohio who is willing to put down in plain black and white his official approval of the above just and righteous law, no matter what amount of pressure the American Tobacco Co. and the cigarette manufacturers may have been enabled to bring to bear on the question. Now, my good friends, here is something for *you* to do. If you have reason to believe that those who sell tobacco in your neighborhood are not complying with this new and righteous law, will you do your part by letting them see a copy of it? I am going to have some cards printed containing the law as above; and if you will pass them around we will furnish as many postpaid, free of charge, as the State of Ohio or the whole United States can take care of. I refer to other States because it may do a lot of good to have people living elsewhere know what Ohio is doing. Now, then, send in your applications for cards—the more the better. Of course we expect you to use them judiciously, and where they will do good. Every teacher in the public schools of Ohio, I am sure, will be willing to present these cards before the school and give them to those who want one. Let us all rally together, and become personal *home missionaries* for the time being. Call the attention of the school scholars particularly to the fact that we here in Ohio propose to *stop* building bigger penitentiaries in Ohio, at least for our boys; and we propose, too, to stop building asylums to accommodate more idiots and imbeciles. We are not planning to "kill off the fools," but we *are* planning to stop growing that kind of crop, here in Ohio. "Whatsoever a man soweth, that shall he also reap."

(House Bill No. 46.)

AN ACT

To amend section 12965 of the General Code, relative to smoking or using cigarettes by minors.

Be it enacted by the General Assembly of the State of Ohio:

SECTION 1. That section 12965 of the General Code be amended to read as follows:

Sec. 12965. Whoever sells, gives, or furnishes to a person under eighteen years of age a cigarette, cigarette wrapper, or substitute for either, or a cigar or tobacco, shall be fined not less than twenty-five dollars nor more than one hundred dollars, or imprisoned not less than two days nor more than thirty days, or both; and for each subsequent offense shall be fined not less than fifty dollars nor more than three hundred dollars, and imprisoned not less than five days nor more than sixty days.

SECTION 2. That said original section 12965 be and the same is hereby repealed.

GRANVILLE W. MOONEY,
Speaker of the House of Representatives.
FRANCIS W. TREADWAY,
President of the Senate.

Passed April 21, 1910.
Approved April 25, 1910.
JUDSON HARMON, *Governor.*

You will notice from the above that there is now a fine of $25.00 or more for anybody, old or young, who gives a boy under the age of 18 a chew of tobacco or a cigar or cigarette; and the purpose of this card is, largely, to ask you to help to have this law rigidly enforced, especially as it has the approval of the Governor of Ohio, Judson Harmon.

Just as we go to press the following was put into my hands:

Dear Mr. Root:—I am very much in sympathy with the general tenor of your sermon in the last GLEANINGS. I know much about the condition among our young folks, as they often come to me

for private advice. I have to-day tried to save one boy from paying $75 to a quack for "a course of treatment." He told the boy that would not be all, only a good start, as it would take a long time to work a cure. And not a word can one say in print without bringing in protests from the good people. You have the advantage of me in this line. I once tried to give some earnest advice to boys in this line; but one of the editors returned the article, saying this sex question must be let alone. O God! how long? The boys must suffer all their lives; never be the men they might have been; and married women must often do the same on account of the lust of man, largely brought on by cigarettes, tobacco, and drink, but not by fruits, grains, and vegetables. I started out only to thank you for your article—show my appreciation. But it is hard to stop when I get started on this subject.

When you people come out here I am going to make you some drink of wheat, all my own make, costing about 3 cents a pound, and it is good, too, as well as perfectly pure and wholesome.

Most cordially,

Hudson, Ohio, June 7. T. B. TERRY.

Health Notes

By A. I. ROOT

GOING WITHOUT SUPPER, ETC.

It is now toward three months since I have taken any food (except apples) after the noon meal; and so far, dear friends, I am more in love with it than ever; and I am just beginning to discover that it includes something that I had never thought of till recently. Most of you are aware that I have been in the habit of taking a little sleep of fifteen or twenty minutes before my dinner for several years past. It must have been thirty years ago when I began to break down, and my good old friend Dr. Salisbury said I should never think of eating a meal when tired out with either mental or physical labor. He said it would add ten years to my life if I would take a good nap just before dinner. He may have said just before each meal — I do not remember now.

Well, I have been doing this for at least ten or twenty years past. In fact, I could not hold out without it; and I want to say to all of you that any man, woman, or child who is troubled with indigestion will find it a tremendous help to get a good rest (and a short nap is the best thing in the world) just before mealtime, especially before the heartiest meal of the day. I think almost any physician will agree with this. The digestive apparatus can never do its best work when you are tired out and *used up*. Your rest over night has recuperated and recruited your system so that all the organs ought to be in good trim for breakfast. Now make a mark right here. I am coming back to this point a little further on. If you stop your work, whatever it is, before noon, go off to some quiet place where there is plenty of air, and lie down, and you will soon get in the habit of taking a little sleep. When you awake you will probably not be as hungry as you were before your nap, but your digestive apparatus will be in very much better trim to make the best possible use of the nourishment your dinner affords you. Now, I have for some twenty years past been getting the rest needed before both breakfast and dinner. I have also *of late* been in the habit of having a nap *after* my five-o'clock supper. The reason is, I am "played out" if I do not have this rest; and without it I feel incapable of looking over the heap of periodicals (that come every day) toward evening. Now notice. My breakfast and dinner are taken according to Dr. Salisbury, but not my supper; and for years past I have been more or less disturbed during the night by indigestion, manifesting itself by nightmares, etc.; and when, according to my brother's suggestions, I went without my supper, these unpleasant symptoms ceased at once; and even though I went to bed feeling hungry and faint I always woke up feeling bright and well — no hunger at all. In fact, I greatly enjoy looking after the chickens, and taking a hoe and working in the garden until breakfast is *fully* ready. I am never in a hurry for breakfast at all. Now, on the old plan of three meals a day, before my dinner was all out of the way, a lot of rich and nourishing food was taken at five o'clock. Of course I felt hungry, and thought I needed food. Did you ever see a baby cry because it felt bad, and mistaken friends imagined the poor thing was hungry, and then added to its distress and misery by giving it more food? Sometimes nature protested to the extent of throwing up a whole lot, and then the baby could laugh and smile once more. Perhaps it is not much use to talk, for the greater part of you will think "circumstances differ;" but if you will just try it for three or four days, or a week, may be you will have some more kind words to express to your old friend A. I. Root.

Now look here. I have had just one regular supper in the past three months. I attended a Congregational conference where they had a banquet at 5:30 in the afternoon; and to avoid seeming odd or singular, and also to test the effect of supper, I decided to partake with the rest. By the way, this banquet was a model of its kind. We had cream-potatoes, nice bread and butter, eggs, etc., and all for 25 cents. Every thing was nicely served by the ladies of the church; and if all banquets were like that one, good wholesome food at an early hour, at such an exceedingly moderate price, I should not have much to say against them. Well, in order to see how a supper would work once more, I ate moderately about as I used to do, then rode in the open air about 35 miles in an automobile. The open-air ride should have helped to digest that supper if any thing would; but I was distressed all night, had the nightmare, had to get up one or more times, and got up in the morning with a bad taste in my mouth without a bit of the exhilaration and enthusiasm that I had all along of late enjoyed from the refreshing morning air. I said right away, "No more suppers for me." You see, with my present program I am thoroughly rested before each of the two meals of the day; and when I retire for the night the food taken at noon is

thoroughly digested and out of the way. There is a general cleaning-up of all odds and ends in the whole digestive apparatus. Before I go to sleep nature has a chance to mend, and close up and clean up everything in the whole machinery, for there is no trash lying around in the way to breed appendicitis, fever, and other ills.

Perhaps I should not omit saying that at just five o'clock I have three or four good nice apples. I spoke to Terry about it. He said that good raw apples can be so easily digested that they are taken care of and out of the way within an hour or two after eating them; and I tell you I enjoy my apples every day of my life as I never enjoyed apples or any other fruit before.

OATS FOR PEOPLE AS WELL AS FOR CHICKENS; ROLLED OATS VERSUS ROLLED WHEAT.

Mr. A. I. Root:—I have given some thought to nutrition, and read what you and Terry write on the subject. Have you read Bulletin No. 207, from the Ohio Experiment Station? I believe you will find it of great interest, and will wish to call the attention of your readers to it.

I have eaten Pettijohn's rolled wheat, and also rolled oats, and like the oats much the better, while the cost is only about half. I use the oats without cooking, with cream or goat's milk, to dampen them slightly. I chew them well, and find them very good food. I have been using them thus for three years, and am now heavier than at any time before in my life. I am five feet ten inches in height, and weigh 166 lbs. I have a boy of five and a girl of three years, and have not paid ten cents for medicine during their lives for either them or their parents. They usually have cocoa to drink, or goat's milk, and nearly always ask for some rolled oats (uncooked) to put into the last few spoonfuls of their drink; and nearly all the bread we eat is made with one-third rolled oats to two-thirds flour. Give this a trial, then advise all your readers to go and do likewise, and for ever after thank you and me,

I buy rolled oats in 90-lb. bags of Montgomery Ward & Co.; and when the people know their value the price will be very much higher than they now are. The price for May and June is $2.18 per 90-lb. bag, while the cheapest flour is $2.90 for 98 lbs. I see no reason why any one should need a roller to roll wheat at home when these oats may be bought for little more than the price of wheat, and are far better in every way. Compare the analyses of food stuffs below:

	Cost.	Water.	Protein.	Fat.	Carbohydrates.	Calories.	Ash.
Rolled oats	.03	7.7%	16.7%	7.3%	66.2%	1850	2.1%
Rolled wheat	.06	10.1	11.1	1.7	75.5	1685	1.6
Wheat flour	.03	12.0	11.4	1.0	75.1	1650	.5
Crackers, soda	.06	5.9	9.8	9.1	73.1	1935	2.1
Bread	.06	35.6	9.3	1.2	52.7	1205	1.2
Potatoes	.01	78.3	1.8	.1	14.7	310	.8
Beefsteak, round	.20	62.5	19.2	9.2		745	1.0
Eggs	.20	65.5	11.9	9.3		635	.9
Oysters	.20	88.3	6.0	1.3	3.3	230	1.1
Butter	.30	11.0	1.0	85.0		3605	3.0
Butter, Peanut	.12	2.1	29.3	46.5	17.1	2825	5.0
Peanuts	.07	6.9	19.5	29.1	18.5	1935	2.2
Evaporated cream	.09	68.2	9.6	9.3	11.2	780	1.7
Cocoa	.30	4.6	21.6	28.9	37.7	2320	7.2
Chocolate	.30	5.9	12.9	48.7	30.3	2860	2.2
Cocoanut shred	.14	3.5	6.3	57.4	31.5	3125	1.3

Notice how well oats compare with wheat in every element, and particularly in protein and fat, the two important ones. And the oats are about one-half richer in protein than flour, and more than seven times as rich in fat. It is well known that the Scotch live largely on oatmeal, and they are good examples of brawny, healthy, and vigorous men. It is little less than criminal to feed growing children largely on white bread and potatoes. They need more protein and fat than do adults, particularly the aged or idle. Notice bread and crackers. The latter have seven times as much fat and but ½ the water. Eggs and oysters make a poor showing, considering price, while cocoanut, peanuts, cocoa, and chocolate show up well. The high cost of living and the cost of *high living* have made people "sit up and take notice" as never before.

The prices given in the table are, of course, only approximate, as they vary greatly in different sections and with different merchants.

I also use rolled oats almost exclusively as feed for my young chicks, so far as grain is concerned, and find it an excellent feed.

I should judge that the fine meal that might be sifted from these oats would be equal or superior to most meals as a substitute for pollen (for bees), as it is more highly nitrogenous. Peameal might be an exception.

Packerville, Ct., May 7. E. P. ROBINSON.

The above letter came to hand some time ago. Since then we have been using a good deal of rolled oats; and the nicest gems I think I ever ate were made by mixing rolled oats with graham flour. The oats were first soaked in sour milk over night before being stirred into the graham flour. And, by the way, it never occurred to me before that rolled oats are not only *cheaper* than wheat or wheat flour, but cheaper for *chickens*, especially baby chicks, and, in fact, for chicks of any age, than any of the chick foods on the market. No matter where you buy your baby chick food, or prepared chick food of any sort, if you feed it in a pan or tight box you will find with the very best samples quite a per cent of some stuff that the chickens will not eat. Some of it they will consume if they are *starved* to it; but it certainly does not pay to force chickens to eat what they do not seem to want. Well, this rolled oats is, *every particle of it*, nourishing food, and the chickens will eat it up perfectly clean. The dust or fine flour, what little there is of it, if mixed up with water, or, better still, with milk, makes the best *wet* mash in the world, I do believe, for chickens of any age.

The table Bro. R. has given above is somewhat startling; but comparing it with other tables furnished by the Department at Washington I think it is about correct.

Now, just one thing more about no suppers. The meal that suits me best *just now* for breakfast and dinner (and, in fact, I have told Mrs. Root I feel as if I should like it winter and summer) is oatmeal mush baked slowly in an oven until it can be sliced up like bread.

Put several slices on your plate, right warm from the oven. Cover them well with butter; then put on some good thick honey, say the drainings from the uncapping-can. Now with a small pitcher of milk right by your plate (I rather prefer cold milk if I can get it, especially in summer) it makes a repast fit for a king, or better still, perhaps, for a laboring man who works out of doors every day. I verily believe I would consent to be a vegetarian if I could have plenty of

oats cooked in this way with good milk and honey, and good crops of oats right in sight, growing on our own farm, to furnish oats for the family, as well as for the horses and chickens. Doesn't this come pretty near being "a land flowing with milk and honey"?

One of my recent "happy surprises" was that, since omitting suppers, I can eat honey for my noon meal in a way I have not been able to do for years past.

A CLIPPING FROM THE HOME PAPERS WHEN THEY WERE FIRST STARTED IN THIS JOURNAL 35 YEARS AGO.

While discussing Terry, Fletcher, Sinclair, and others, in regard to the amount of food really needed to sustain health, I recalled some of my experiments conducted in 1875, when the Home papers were first made a department in GLEANINGS; and to show you how history repeats itself I make the following extract from Chap. V., December, 1875:

We have in our home ofttimes discussed the comparative expense of the different articles of food, especially when there seemed unusual need of reducing expenses; and the difficulty of getting at any really definite figures in the matter finally resulted in the following experiments:

Nov. 1, for breakfast I ate five graham gems. These, with a cent's worth of butter, cost 3 cts. So far as the gems were concerned, my hunger was perfectly satiated; but I could with ease have eaten after this a piece of pie and perhaps cake — may be an apple or bunch of grapes also; but as I was "in pursuit of science," and bent on determining just how much food was really needed, I ate nothing more. Somewhat to my surprise I *did not* get hungry before noon, but, on the contrary, felt unusually well. At dinner I ate 4 oz. of rice, costing 3 cts., with one ounce each of sugar and butter, which made a very good meal for 5 cents. As I used few dishes for this simple repast, the labor of preparing the meal was also economized. The next meal was 4 oz. corn meal and half a pint of milk—cost 3 cts.

The fourth meal was ¼ pint of beans — cost less than *half a cent*. This amount seemed so ridiculously small that I spent the afternoon in pretty severe outdoor labor to see if it were really possible one could live on such an insignificant expense. To my surprise I felt unusually well, and yet this vegetable was one that always disagreed with me when eaten as usual with a full meal of other things. *In all these experiments I had taken unusual pains to masticate my food, and, as a result, ate slowly.*

Fifth meal, beefsteak and pork sausage, 1 lb., cost 16 cts. I should have eaten the whole with ease had not Blue Eyes petitioned for a part of "papa's supper," and so *my* supper cost 14 cents.

As the program was that I was to have what I liked, providing I could give the cost of it, I next chose ginger-snaps, of which I am very fond, and cheese. As I had eaten no fruit I chose a good glass of lemonade at the close of the meal, which cost 1 ct., the cheese 2 cts., and the snaps 8 cts.—11 cts. in all.

Seventh meal, 1¼ lbs. of potatoes roasted in the coals—cost less than half a cent; and the milk eaten with them brought it up to 2 cts.; but as I got hungry before supper I concluded that potatoes would not compare with the grains and beans.

Eighth meal — felt like having some more meat; and to try something a little cheaper I paid 25 cts. for a soup-bone. This gave a very good meal for about 4 cents.

Ninth meal — 4 oz. oatmeal, and a most delicious meal it was, for about 3 cents.

Tenth meal—one gill of whole corn soaked in water 16 hours, the hull taken off in the usual way with a lye made of ashes, and corn boiled until thoroughly cooked. When eaten slowly with a little salt it made a good meal for only ¼ of a cent.

Eleventh meal, and the most delicious one of all, was simply whole clean wheat boiled until well cooked, and served with butter and clover honey. I ate about ¾ of a cent's worth, and about 2 cents' worth of butter and honey, but ate more than I needed.

Twelfth meal — oysters. They cost 10 cts.; milk 1 ct., crackers 2½; whole expense, 13½ cents.

Thirteenth meal — eggs roasted on the coals, *a la* boyhood days. This experiment was a failure from the fact that we roasted only five, and, after eating these, were so hungry that we ate a quarter of a grape pudding and a large slice of home-made gingerbread. The latter costs only 5 cents per lb., while the snaps are 18 at the grocery. Eggs would be quite expensive for a full meal at present rates (22 cts.), and we should probably want eight or ten to be equivalent to ½ lb. of wheat.

In the above experiments it will be observed that we have paid little or no attention to sanitary matters, and we should be very sorry to discourage the use of meat, having at one time regained health by an exclusively meat diet of many weeks; but there is one very important fact elucidated, viz., that a more extensive use of our grains in their unground and unbolted state would not only be a great saving of money but a positive gain in health. As an illustration, a pound of wheat costs 2 cts., and is worth more in every way than a pound of flour that costs 4 cts. or a pound of bread costing from 8 to 10. Cracked wheat, it is true, can be bought of the grocer; but as it must inevitably pass through several hands before it gets to the consumer, they really can not furnish for much less than 6 or 8 cts. what they pay 2 cts. for. Much the same might be said of all our grains; and if you have never tried cooking them whole in the way we have mentioned, it may be worth while to try the experiment. If they are simply broken in two, say in a common coffee-mill, they will cook more quickly; and mills are now in the market for this purpose, in size and capacity from a coffee-mill all the way up.

The great strides that are now being made in science and the arts and industries are, by a kind of Yankee faculty for cutting 'cross lots, producing just as good or even a better article, with less labor and machinery, less complication, and fewer hands employed. Suppose we had a job of work to do on the opposite side of a stream. We might go down stream a mile to get to a bridge, and then come back a mile on the other side, or we might roll up our trousers and splash through, and have the work a good way along by the time we reached the bridge. Some might say that the latter is an undignified way; but if it is the only road to honest independence, we would advise taking it. We can splash through the water on a small scale by taking the coffee-mill some evening and seeing how much money we can make by grinding wheat at 2 cts. per lb.; for even when ground very coarsely it can be made into most excellent bread. You can splash through the water again by purchasing meat that is good and wholesome, at 4 cts. per lb. instead of 16. And, again, by paying cash for every thing you buy, and insisting that you have it at the very lowest *cash* figure. Haven't you the cash on hand? Reduce your expenses so that you can lay up half of what you have formerly paid out for your table in the way I have mentioned; and before you are frightened for fear such a course may look undignified, reflect that some of the finest minds the world has ever produced have been obliged to study this matter as one of the fine arts — how to live cheaply.

We have plenty of men in our cities who make it a business to help those who are not afraid to splash through the water, by offering the staple commodities of life at very close figures indeed; but you must *pay cash*, for these men figure on so small a profit that it is entirely out of the question to add a per cent to cover the losses on bad customers, as most of our country merchants and grocers are obliged to do; and, for that matter, you can almost always make an arrangement with your own grocer, if you will tell him that his money is always ready, or, better still, if he is trusty, give him the money to get what you want when he goes to the city. If you have *always* the money in your pocket you need not fear but that you will always find him accommodating.

You see from the above that I went over the same ground where Terry and Fletcher have recently made such a stir showing

that we can not only get good health, but very much better health, by eating only a little of some plain and simple article of food, and only one or at most two kinds of food at the same meal. Not only this, but I had in some way caught on to the importance of eating slowly and chewing thoroughly. See italics in the third paragraph in the above. Again, I decided 35 years ago that the most *delicious food* I could get hold of was boiled wheat, with butter and clover honey. But the *cheapest* meal, and perhaps almost as delicious as the wheat, was hulled corn. Just think of it—¼ cent's worth of corn satisfied the appetite and gave abundant strength to do good hard work in the open air! A meal entirely of beans cost a little more. Of course many articles of food cost more than they did 35 years ago; but it still remains true that anybody who cares to cut down living expenses can easily do it and have better health—yes, far better—than where we pay anywhere from .15 to 50 cents for a good square meal *three times* a day, week in and week out.

Much is said at the present time about the exorbitant prices of all sorts of food, etc. In order to show you that things are not in such a terribly bad condition now, let me make another quotation from that journal printed 35 years ago:

From quotations from W. P. Southworth & Co., 116 Ontario St., Cleveland, O., I glean the following:

Standard A coffee sugar by the barrel, 10½ cents; retails for 12½. Golden syrup in 5-lb. kegs, 66 cents; retails at $1.00. Cod-fish, 25 lbs., 5¼ cents; retails at 8 cents. German erasive soap, by the box, 4¾ cents; retails at 8 cents. Soda and saleratus, 10-lb. lots, 7 cents; retails at 10 cents. Oatmeal and barley in 20-lb. lots, 5 and 7 cents; retails for 8 and 10. Corn starch in 40-lb. boxes, 10 cents; retails at 15. Rice, 10-lb. lots, 8¾; retails for 12.

Four hours ago I stepped into a neighbor's grocery and selected canned goods for my dinner. I ate a full forty cents' worth, and yet was no better satisfied than with my three cents' worth of wheat, butter, and honey.

I have selected only a few of the necessaries as samples; tea, coffee, and tobacco would certainly be out of place in a home where economy is to be made one of the fine arts, it seems to me, to say nothing of other objections.

Dear friends, if you get right down to it, there are many things that are very *much cheaper* than they were 35 years ago.

"DIGGING OUR GRAVES WITH OUR TEETH."

My dear Brother:—GLEANINGS comes to our table regularly, and your kindly brotherly suggestions show that you find something in life of far more value than mere paltry dollars. I note with special interest what you say in your issue of May 1 relative to the omission of supper. I am sure your plan is an excellent one. As a rule our people are "digging their graves with their teeth." We have all been eating too much, even of "health foods."

Many years ago I practiced what you preach now, and found it very helpful. Then I came in touch with Dr. Dewey's and Haskell's "no breakfast" plan, and also omitted breakfast. While I have not strictly adhered to the plan, my experience has been that *one good meal a day*, about 11 o'clock A.M., and then a few wholewheat crackers and good ripe fruit, as you suggest, about 6 o'clock P.M., are all that our bodies require to remain in good health.

I have pleasure in mailing you one of Mr. Haskell's books under separate cover. Please receive it with my compliments, and read as much or as little as you like. There is good in all these cults; and when combined with Fletcher's method of "chewing the stuffing out" of every mouthful of food, we rise to higher levels of living.

Boonville, Mo. E. W. PFAFFENBERGER.

Accompanying the above kind letter was a beautiful book of over 200 pages by Chas. T. Haskell, of Norwich, Ct. Price $1.00. The title of the book is, "Perfect Health: How to Get it and How to Keep it. By One who Has it." The book is, from beginning to end, a story of how hundreds of ailing people cured themselves of various diseases without a particle of medicine. The book goes a little further than I have gone as yet, inasmuch as it includes going without breakfast as well as supper—one good wholesome meal a day. There are letters from more than a hundred people who were literally "digging their graves with their teeth," and did not know it till Dr. Dewey and Mr. Haskell opened their eyes. Some of our readers may remember that I gave a review of Dewey's book in GLEANINGS for March 1, 1896. Dr. Dewey at that time was having great success in curing people, even though they were down to the brink of the grave, by "going without their breakfast;" fasting, etc., and they are still alive, and he is still healing humanity in that way. Of course, going without your breakfast simply does not cure *all* diseases; but going without food till Nature has had a chance to catch up is certainly curing a lot of people. I was particularly interested in one chapter in the book where a lot of prominent people who had become strong and well by fasting met together in what they called a "fasters' feast." Both men and women, now strong and well, testified to having fasted all the way from three days to thirty or forty, and even *fifty-five* days in one case. Some of you may say you would rather die than go without eating for so long a time as the above. Very well; it is your privilege; but I for one am going to live to a good old age if so simple a thing as going without food will enable Nature to correct and remedy all ills. The author of the book tells us that going without breakfast *just twice* cured him of a headache that doctors had worked on before for *eight years* without effecting a cure. I do not suppose it makes very much difference whether you go without breakfast or supper; but in my case supper seems to be the better one to omit, because I have a good complete rest (and *sleep*) just before sitting down to the two other meals.

THE STARVATION CURE; WILL IT WORK WITH ALL PEOPLE ALIKE?

Mr. Root:—I trust I shall not be considered presumptuous for writing to you to warn you against attempting a prolonged fast as you proposed on p. 231.

Your attenuated body has not enough reserved material laid up in it. Your highly nervous temperament keeps the supply used up about as fast as it is digested. You have no surplus flesh. Some people store a great deal of surplus flesh until overloaded, and still continue storing.

Some store a great deal, but use it in case of need, and can perform great feats of prolonged exertion, and could fast a long while. I believe some could fast *twice* forty days. The system can be trained to control the storing and also the using, in certain

directions, or by different parts of the body or brain, by doing as Sinclair did, a little at a time; then a little more and a little more, with rest and change between for storing power again in the form of digested material. This is the way in which habits, either for good or ill, become established, that are so hard to break; and a habit may be either bodily or mental.

Many of our habits are inherited. We were trained in these before we were born or begotten. Habits formed by associations, either good or bad, are much more easily overcome, for good or evil than those inherited; and those inherited from temporary conditions of the parents, though not in many cases very striking and troublesome, are so stubborn to deal with as permanent conditions of many generations of ancestors. Here is where great mistakes are made by many would-be reformers through ignorance of these things.

I have had great opportunities for observing these things in a very extensive practice in applying the laws of hygiene, physiology, and phrenology instead of medicine—in cases among all classes of people, from statesmen to convicts in various parts of the country, and in many cases an uncommonly intimate and confidential personal acquaintance with the persons.

I don't want you to starve yourself to death yet. I want you to stir folks up on your varied subjects awhile longer. If you are going to depend on miraculous aid in your fast it would not prove much as to natural laws for the instruction of others; but don't think that I don't believe fully in a special dealing of Providence with our individual needs; but I believe they are mainly accomplished by natural means that we don't see.

In closing permit me to say I think it is "real naughty" of you to say it is "funny" for people to starve to death in a week of time in a desert or in shipwrecks. I don't believe you really think so. Their bodies are in the habit of keeping only a small supply of material laid up.

Lafayette, Ga., May 28. C. W. LUDLOW.

Friend L., you are a good deal if not altogether in the right about the matter; but while I am feeling as well as I do now by simply going without any supper I do not think I shall try the starvation plan. As it is getting to be a sort of fad, however (for many people are trying it), we shall very soon have the truth pretty well sifted out. If I am correct, Sinclair was by no means a heavy or fleshy man when he started out on the starvation idea. In regard to your closing sentence, I humbly beg pardon for having left the impression that I have little or no sympathy for those who really starve to death. What I had in mind as being "funny" was that Sinclair had also been 72 hours without food, and, instead of being starved to death, he was in excellent spirits, and very much alive, indeed. And, by the way, my own family made a protest much like yours just as soon as I suggested a fast of several days.

PARCELS POST, ETC.

We clip the following from the Cleveland *Plain Dealer* for May 21. I want to call your attention to the fine piece of sarcasm at the close.

You can send a pound of merchandise from Cleveland to any one of twenty-nine countries—anywhere in the world, practically—for 12 cents. But if you drop it in the Cleveland postoffice for delivery in East Cleveland, or Akron (40 miles), it costs you 16 cents. You can mail a parcel weighing eleven pounds at the same rate to any foreign country. But if it is to stay in the United States, the limit is four pounds. The express companies have kindly lent their support to this arrangement.

SHORT WEIGHTS AND SHORT MEASURES; SCRIMPING IN FOOD PRODUCTS.

I have frequently spoken of hulled corn as a delicious and healthful food. While in Florida we used quite a little of it; and to save work in the kitchen, where fuel is expensive and the weather warm enough without being over a hot stove, we have used quite a little hulled corn in cans. Well, Mrs. Root has frequently called my attention to the fact that these cans were never full—some of them not more than two-thirds full. Just think of asking the consumer to pay for the can and the expense of putting it up, and then giving him short measure, just to save the fraction of a cent! When my attention has been called to this matter I have several times said there ought to be a protest against such little and mean methods of robbing the consumer; but I did not know just where to direct my protest. In view of the above, you may be sure I rejoiced to receive a leaflet from the United States Department of Agriculture in regard to the misbranding of corn. Some 600 cases of this canned corn, put up here *in Ohio*, were examined and *condemned* because the label on each can said it contained "2 lbs. of corn," where there was only about 26 to 28 ounces. Now, if the Food and Drugs Commission is going to go right through the food products in our groceries, and insist that the contents of each and every package shall correspond exactly with the claim on the label, it will be doing a wonderful work for the millions of hard-working people who get at least a large part of their daily food from the shelves of our groceries and country stores. May God help us in our efforts to see that every hard-working man, woman, and child in our nation has a "*square deal.*"

"WE CAN SELL YOUR PROPERTY," ETC.

In our last issue, p. 23 of the advertising department, I spoke of the skill with which swindling firms are trying to imitate personal letters. See the following:

My dear Mr. Root:—I am enclosing another "follow up" letter which came recently—from an "Investment Ass'n." Please notice the superior quality of their imitation of typewriter work, and the way my name has been filled in. Possibly it is not a form letter, or, rather, it may be a form letter really typewritten. At any rate, it is well calculated to deceive any one into believing he is receiving a personal letter. I feel very certain they are swindlers, and seldom give any value. It seems to me the postoffice department should be advised of the matter, and investigate the association's methods.

Packerville, Conn. E. P. ROBINSON.

In the letter inclosed (which really *is* a "form letter,") the words "Mr. Robinson" were so skillfully printed as almost to defy detection; and then the writer went on to tell how very honest *they* were in their methods of business, and how dishonest somebody else was. Let me quote a single paragraph:

This isn't just one extreme case. Similar ones are happening right along, and I tell you it often makes my blood boil when I hear of them. Do you wonder I am in earnest in trying to put my fair and honest plan before people as forcibly as I can? I am

glad to say that, through our co-operative system, which brings buyer and seller face to face, land agents are getting fewer chances to employ their extorting practices.

Poultry Department

By A. I. ROOT

THE KELLERSTRASS WAY.

Two of the weekly poultry-journals, and perhaps more (I have noticed only two) give a page or more to tell at length about Kellerstrass selling 15 eggs for $10.00 for each egg, or $150 for the setting. They also give a photo of the check that Kellerstrass received, to convince the public at large that there was no mistake about it. On page 167, March 1, I told you about his wonderful book and a great part of it was occupied in telling us how he got $2.00 an egg for over 1000 eggs, and that his customers were satisfied with his big prices, etc. It seems, however, from the above that he is not satisfied with $2.00 an egg; and finding that there are at least a *few* people who would "bear it," he has gone up to $10.00 an egg. Well, if these people are really satisfied with their purchase, and think the eggs are worth it, I suppose in one sense it is none of our business. There are a few strains of Kellerstrass White Orpingtons near our Florida home. I explained to a neighbor that Kellerstrass claimed he raised 3000 pullets, trapnested the whole of them, and made a selection of 30 out of the whole 3000 and the eggs he sold for $2.00 apiece were from this choice selection. My neighbor replied, "Mr. Root, if I could be really satisfied that Kellerstrass actually did that thing, I would be willing to pay $2.00 an egg for about half a dozen." By referring to page 303, May 1, you will notice that the wonderful book containing the account of his great and elaborate experiments in years past, "no hot air, but actual experience, mind you," after all these extravagant claims a great part of the book is simply copied from an old poultry almanac. I confess when I called attention to the matter I expected to hear something from Kellerstrass or some of the poultry journals, but not a word of explanation so far. Is that what we are to understand about the much paraded "Kellerstrass way"? If that is the "way" he does things we certainly do not want any more examples of the kind to be held up before the rising generation, and paraded as the wonderful achievements of science, etc. We are obliged to confess that he is an adept in one way —the science of getting $10.00 an egg from people who have more money than ——.

OUR FLORIDA POULTRY RANCH IN THE MONTH OF MAY.

Dear Bro. Amos:—I have overcome the trouble with soft-shell eggs. I have not found one for several days. I get three eggs now from the Buttercups almost every day. I am also having better luck now with those White Leghorn mothers; but if any other chick gets into their coop, whether large or small, they will kill it. I have lost several that way. I find the nesting-places alive with those jigger fleas. Those were what made business for us all in the house. Lee's lice-killer will not faze them. We must use salt and tobacco. I am now getting rid of them. I have got to make some places for the young hatches. I do not think they do well crowded together. I think I will make some coops to hold a brood of 12 that I can move, and so make them that the brood can be raised and stay right in the coop for a home. I have lost several nice little Buttercups by their getting confused in moving and going to the wrong mother, she killing them. I would not keep *one* of those white hens for mothers if I had any others, as they are such terrors to other chicks. I keep them all shut up on that account. I have three broods now, and have to keep them separate so the chicks do not get mixed. One hen hatched 12 out of 13, and I have got them *all* so far. Another had 12, but one of them got into another coop and was killed.

I can easily keep larger ones out, but the small ones will get mixed if they are close together. The weather has been fine but very dry. We have no trouble in keeping things sweet on account of heat. So far it beats Arizona for climate.

I believe I am going to like chickens. I notice a yardful of Black Lanshans that belong to a Mrs. Hadley, over near Fogartyville. She wants $5.00 a setting. I think I will get a setting and raise some of those big ones to take the place of an incubator. They take 18 eggs all right. We can get baled alfalfa hay here as cheap as any other hay; and if we had a cutting-box, that is the cheapest way to get green feed. Cut the hay fine, and soak it. I think they will eat it. I am going to try it on a small scale.

I get out at four in the morning and go until I get tired, and then take my nap and get dinner, and go till bedtime. But I like it, as the days go by so fast.

Mr. Rood is getting up a nice big barn, and has already got the frame up. I have had trouble with only one hawk. He was after the chickens, but I got him before he got a chick. I shot him on the wing. It was a large one, big enough to carry a big hen. Mr. Ten Broek thought it was an eagle.

Bradentown, Fla., May 22. BRO. JESS.

The above letter was, obviously, not intended for print; but I want you all to know all about the chicken business in Florida. He writes, June 3, that the three Buttercups laid 65 eggs in the month of May.

Convention Notice.

SUMMER FIELD MEETING OF NEW JERSEY BEE-KEEPERS' ASSOCIATION.

The New Jersey Bee-keepers' Association will hold a summer field meeting at Hackettstown, Warren County, New Jersey, on Wednesday, June 29, 1910. The full program arrangements are not completed yet, but it will include the following:

"Profitable Spring Manipulation in the Production of Extracted Honey," by Harold Hornor, Jenkintown, Pa.

"Increasing the Sale of Honey by Systematic Advertising in the Grocery-trade Journals," by F. J. Root, Advertising Manager of *The American Grocer*, New York.

"Suggestions on Foul-brood-inspection Laws," by John B. Smith, Sc. D., State Entomologist, New Brunswick, N. J.

"Shall the New Jersey Association Join the National Association in a Body?" A general discussion, led by E. G. Carr, New Egypt, N. J. A vote will be taken on this proposition.

"Comb Honey," by Ralph Fisher, Vienna, N. J.

All bee-keepers in New Jersey and surrounding territory are invited.

Bee-keepers and manufacturers are requested to bring any new appliances, bees under observation, hives, or any thing pertaining to apiculture for exhibition purposes.

Hackettstown is on the D., L. & W. R. R., and can be reached from all points on that and connecting lines. Arrangements will be made for serving a lunch and refreshments.

A complete program will be mailed to all New Jersey members and any others who write us.

Pittstown, N. J. ALBERT G. HANN, Sec.